PHILIPS

VARI*LITE

Series 400, 700, & 800 Luminaires

VL440 / VL770 / VL880 Spot

USER'S MANUAL

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VL440 / VL770 / VL880 Luminaire User's Manual

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How To Obtain Warranty Service

A copy of the Vari-Lite Limited Warranty was included in the shipping package for this VARI✻LITE product.

To obtain warranty service, please contact customer service at 1-877-VARI-LITE (1-877-827-4548), +1-214-647-7880, or entertainment.service@philips.com and request a Return Material Authorization (RMA) for warranty service. You will need to provide the model and serial number of the item being returned, a description of the problem or failure and the name of the registered user or organization. If available, you should have your sales invoice to establish the date of sale as the beginning of the warranty period.

Once you obtain the RMA, pack the unit in a secure shipping container or in its original packing box. Go to the Vari-Lite web site www.vari-lite.com, click on the Support link, and download the RMA form. Put the completed RMA form in shipping container along with a copy of your invoice (if available). Write the RMA number legibly on or near the shipping address label and return the unit, freight prepaid to:

Vari-Lite
Attention: Warranty Service (RMA#_____)
10911 Petal Street
Dallas, Texas 75238 USA

As stated in the warranty, it is required that the shipment be insured and FOB our service center.

Compliance Notice

FCC This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with Vari-Lite system, service, and safety guidelines, may cause harmful interference to radio communications.

As tested under this standard:

FCC 47CFR 15B clA*CEI

Issued:2009/10/01 Title 47 CFR Part 15 Subpart B Unintentional Radiators Class A

Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

CE

Declaration of Conformity

We declare and certify, under our sole responsibility, that this product complies with the relevant clauses of the following standards and harmonized documents for Safety and Emissions:

CENELEC EN 55022

Issued: 2006/09/01 Information Technology Equipment - Radio Disturbance Characteristics - Limits and Methods of Measurement Includes - Incorporates A1:10/2007

CENELEC EN 55024

Issue: 09/01/1998 Information Technology Equipment - Immunity Characteristics Limits and Methods of Measurement - Amendment A1: 01/2001 - +A2: 01/2003 -+ISI:2007

Safety Notice

It is extremely important to read ALL safety information and instructions provided in this manual and any accompanying documentation before installing and operating the products described herein. Heed all cautions and warnings during installation and use of this product.

Safety symbols used throughout this manual are as follows:

CAUTION advising of potential damage to product.

WARNING advising of potential injury or death to persons.

GENERAL INFORMATION PERTAINING TO PROTECTION AGAINST ELECTRICAL SHOCK, FIRE, EXPOSURE TO EXCESSIVE UV RADIATION, AND INJURY TO PERSONS CAN BE FOUND BELOW.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST FIRE

1. VARI✻LITE luminaires have been designed for use with specific lamp types. The VL440 / VL770 / VL880 luminaire requires a certain type of lamp (see "Replacement Items/Accessories" on page 9 for all lamp types). Installing another type or unapproved lamp may be hazardous.
2. Luminaires may be mounted on any type of surface as long as mounting instructions are followed. See instructions detailed in this manual.
3. Note distance requirement from combustible materials or illuminated objects for VARI✻LITE luminaires.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK

1. VARI✻LITE luminaires are designed for dry locations only. Exposure to rain or moisture may damage luminaire.
2. Disconnect power before servicing any VARI✻LITE equipment.
3. Servicing to be performed by qualified personnel only.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST EXCESSIVE EXPOSURE TO UV RADIATION

1. Many VARI✳LITE luminaires use a lamp that produces UV radiation. DO NOT look directly at lamp.
2. It is hazardous to operate luminaires without lens or shield. Shields, lenses, or ultraviolet screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired. For example, by cracks or deep scratches.

WARNING:
INSTRUCTIONS FOR PROTECTION AGAINST INJURY TO PERSONS

1. Exterior surfaces of the luminaire will be hot during operation. Use appropriate safety equipment (gloves, eye protection, etc.) when handling and adjusting hot equipment and components.
2. Luminaires will have a hot lamp when operating. Disconnect power and allow lamp to cool before replacing.
3. Arc lamps emit ultraviolet radiation which can cause serious skin burn and eye inflammation. Additionally, arc lamps operate under high pressure at very high temperatures. Should the lamp break, there can exist a danger of personal injury and/or fire from broken lamp particles being discharged.
4. Wear eye protection when relamping.
5. Appropriate safety equipment (gloves, eye protection) should be used when handling damaged lamps.
6. If lamp is touched with bare hands, clean lamp with denatured alcohol and wipe with lint-free cloth before installing or powering up the luminaire.
7. The lamp shall be changed if it has become damaged or thermally deformed.

WARNING:
RF INTERFERENCE

1. This is a Class A product. In a domestic environment this product may cause radio interference, in which case, the user may be required to take adequate measures.

Sicherheitshinweise

Es ist äußerst wichtig, ALLE Sicherheitsinformationen und -hinweise in diesem Handbuch und dem beiliegenden Informationsmaterial zu lesen, bevor Sie die hierin beschriebenen Produkte installieren bzw. bedienen. Halten Sie bei der Installation und dem Einsatz dieses Produkts alle Warnhinweise und Vorsichtsmaßnahmen ein.

Folgende Sicherheitssymbole werden in diesem Handbuch verwendet:

VORSICHT - weist auf möglichen Produktschaden hin.

WARNUNG - weist auf mögliche Körperverletzung und Lebensbedrohung hin.

NACHSTEHEND FINDEN SIE ALLGEMEINE HINWEISE ÜBER SICHERHEITSVORKEHRUNGEN GEGEN ELEKTROSCHOCK, FEUER, ÜBERHÖHTE UV-STRAHLUNG UND KÖRPERVERLETZUNGEN.

WARNUNG:
HINWEISE ZUM FEUERSCHUTZ

1. VARI✻LITE-Scheinwerfer sind ausschließlich für den Einsatz mit bestimmten Lampentyps. Achten Sie auf den Lampentyp, bevor Sie die jeweiligen Lampen ersetzen. Die Installation eines anderen Lampentyps kann gefährlich sein.
2. Scheinwerfer können auf jeder beliebigen Oberfläche montiert werden, solange Sie die Montageanweisungen befolgen. Detaillierte Hinweise finden Sie in diesem Handbuch.
3. Beachten Sie die Einhaltung des erforderlichen Sicherheitsabstandes der VARI✻LITE-Scheinwerfer von brennbarem Material oder beleuchteten Objekten.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ELEKTROSCHOCK

1. VARI✻LITE-Scheinwerfer eignen sich ausschließlich für trockene Standorte. Regen oder Feuchtigkeit können die Scheinwerfer beschädigen.
2. Unterbrechen Sie die Stromzufuhr, bevor Sie mit der Arbeit an VARI✻LITE-Geräten beginnen.
3. Die Geräte sollten nur von qualifiziertem Personal gewartet werden.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ÜBERHÖHTE UV-STRAHLUNG

1. Viele VARI*LITE-Scheinwerfer verwenden die Lampentyp, der UV-Strahlen abgibt. SCHAUEN SIE NICHT direkt in die Lampe.
2. Es ist gefährlich, Leuchten ohne Linsen oder Blenden zu bedienen. Blenden, Linsen oder Ultraviolettschirme müssen ausgetauscht werden, sofern deren Schutzwirkung durch sichtbare Beschädigung (z. B. Sprünge oder Schrammen) eingeschränkt ist.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN KÖRPERVERLETZUNGEN

1. Bei Betrieb sind die Außenflächen der Scheinwerfer heiß. Verwenden Sie bei der Bedienung von aufgeheizter Apparatur die jeweils geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz etc.).
2. Bei Betrieb der Scheinwerfer ist die Lampe heiß. Unterbrechen Sie die Stromzufuhr und lassen Sie die Lampe abkühlen, wenn Sie diese austauschen.
3. Bogenlampen senden ultraviolette Strahlen aus, die Hautverbrennungen und Augenentzündungen verursachen können. Der Betrieb von Bogenlampen erfolgt unter Hochdruck und bei hohen Temperaturen. Sollte die Lampe zerbrechen, besteht die Gefahr von Körperverletzung bzw. von Feuer, das von Lampenteilen ausgelöst werden kann.
4. Tragen Sie beim Austausch der Lampen einen Augenschutz.
5. Die geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz) sollte beim Umgang mit beschädigten Lampen verwendet werden.
6. Wenn die Lampe mit bloßen Händen berührt wird, reinigen Sie sie mit denaturiertem Alkohol und einem flusenfreien Tuch, bevor Sie die Scheinwerfer installieren oder in Betrieb nehmen.
7. Wenn die Lampe beschädigt oder durch Hitzeeinwirkung deformiert ist, muß diese ausgetauscht werden.

WARNUNG:
HF-INTERFERENZ

1. Es handelt sich um ein Produkt der Klasse A. In einer Wohnumgebung kann das Produkt Hochfrequenzstörungen verursachen. In diesem Fall müssen eventuell geeignete Maßnahmen getroffen werden.

Notes de sécurité

Avant de procéder à l'installation des produits décrits dans ce guide et de les mettre en marche, il est extrêmement important de lire TOUS les renseignements et TOUTES les directives de sécurité contenues dans ce guide ainsi que toute documentation jointe. Tenir compte de tous les avertissements et suivre toutes les précautions pendant l'installation et l'utilisation de cet appareil.

Les symboles de sécurité utilisés dans ce guide sont les suivants :

ATTENTION Ce symbole annonce que l'appareil risque d'être endommagé.

AVERTISSEMENT Ce symbole annonce qu'il y a risque d'accident grave ou même fatal.

CETTE SECTION CONTIENT DES INFORMATIONS GÉNÉRALES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES , LES INCENDIES, L'EXPOSITION EXCESSIVE AUX RAYONS UV ET TOUT AUTRE ACCIDENT POUVANT ENTRAÎNER DES BLESSURES.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES INCENDIES

1. Les luminaires VARI✳LITE ont été conçus pour être utilisés uniquement avec certaines type de lampes. Vérifier le type de lampe avant de remplacer les lampes. L'installation d'un autre type de lampe peut poser un danger.
2. Les luminaires peuvent être fixés sur tout type de surface tant que les directives de montage sont respectées. Voir les explications détaillées dans ce guide.
3. Vérifier la distance à respecter entre les matériaux combustibles ou les objets illuminés et les luminaires VARI✳LITE.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES

1. Les luminaires VARI✳LITE sont conçus pour une utilisation au sec uniquement. Une exposition à la pluie et à l'humidité risque d'endommager le luminaire.
2. Débrancher l'appareil avant de procéder à la révision de tout matériel VARI✳LITE.
3. Les révisions doivent être effectuées uniquement par des personnes qualifiées.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE UNE EXPOSITION EXCESSIVE AUX RAYONS UV

1. Plusieurs luminaires VARI✳LITE utilisent une lampe qui produit des rayons UV. NE PAS fixer son regard sur la lampe.
2. L'utilisation des luminaires sans lentille ou blindage pose des risques. Tous blindages, lentilles ou écrans ultraviolet visiblement endommagés au point que leur efficacité en est affectée doivent être remplacés, par exemple s'il y a des fissures ou de profondes rayures.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES ACCIDENTS POUVANT ENTRAÎNER DES BLESSURES

1. Les surfaces externes du luminaire deviennent brûlantes quand l'appareil est en marche. Pour manœuvrer ou ajuster des appareils brûlants et leurs composants, se protéger suffisamment (gants, protection pour les yeux, etc.).
2. La lampe du luminaire est brûlante lorqu'il est en marche. Débrancher le courant et attendre que la lampe ait refroidi avant de la remplacer.
3. Les lampes à arc émettent des rayons ultraviolets pouvant causer de graves brûlures sur la peau et une inflammation des yeux. De plus, les lampes à arc fonctionnent sous haute tension à de très hautes températures. Si la lampe se casse, les particules de la lampe cassée peuvent causer blessures et/ou incendie en s'éparpillant.
4. Se protéger les yeux pour remplacer la lampe.
5. Utiliser des appareils de protection appropriés (gants, protection des yeux) pour manier des lampes endommagées.
6. Si la lampe a été touchée avec des mains nues, la nettoyer avec de l'alcool dénaturé et l'essuyer avec un chiffon non-pelucheux avant d'installer ou de brancher le luminaire.
7. Si la lampe a été endommagée ou a reçu une déformation thermique, elle doit être remplacée.

AVERTISSEMENT:
INTERFÉRENCE RF

1. Cet appareil est de Classe A. Dans un environnement domestique, cet appareil peut causer des interférences radio, et si c'est le cas, l'utilisateur peut avoir à prendre des mesures adéquates.

Aviso sobre Seguridad

Es muy importante leer TODA la información e instrucciones sobre seguridad que se indica en este manual así como en los documentos adjuntos antes de instalar y operar los productos descritos. Se debe prestar atención a todos los avisos y advertencias durante la instalación y uso de este producto.

Los símbolos de seguridad usados en este manual son los siguientes:

CUIDADO, indica posibles daños al producto.

ADVERTENCIA, indica posibles lesiones o muerte a las personas.

LA INFORMACIÓN GENERAL RELACIONADA A LA PROTECCIÓN CONTRAGOLPES DE CORRIENTE ELÉCTRICA, INCENDIO, EXPOSICIÓN EXCESIVA A RADIACIÓN ULTRA VIOLETA Y LESIONES A LAS PERSONAS SE PUEDE ENCONTRAR SEGUIDAMENTE:

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA INCENDIO

1. Las luminarias VARI✻LITE han sido diseñadas para ser usadas solamente con algunas lámparas. Tome nota del tipo de lámpara antes de reemplazarla. Instalación de otro tipo de lámpara puede ser peligroso.
2. Las luminarias se pueden instalar en cualquier tipo de superficie siempre que se sigan las instrucciones de instalación. Vea las instrucciones detalladas en este manual.
3. Tome nota de los requerimientos de distancia de materiales combustibles u objetos iluminados para las luminarias VARI✻LITE.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA CHOQUE ELÉCTRICO

1. Las luminarias VARI✻LITE están diseñadas solamente para lugares secos. La exposición a la lluvia o humedad pueden dañar la luminaria.
2. Desconecte la energía antes de dar servicio a cualquier equipo de VARI✻LITE.
3. El servicio debe ser realizado solamente por personal calificado.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA LA EXPOSICIÓN EXCESIVA DE RADIACIÓN ULTRA VIOLETA

1. Muchas luminarias VARI✳LITE usan un tipo de lámpara que produce radiación UV. NO mire directamente a la lámpara.
2. Es peligroso operar luminarias sin lentes o protectores. Debe cambiar los protectores, lentes o pantallas ultravioletas si se aprecia que han sido dañadas, y que su efectividad pudiera estar deteriorada. Por ejemplo, si tuvieran rajaduras o raspaduras profundas.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTRA LESIONES DE PERSONAS

1. Las superficies exteriores de las luminarias están calientes durante su operación. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando haga ajustes en el equipo y componentes que están calientes.
2. Cuando las luminarias están en operación la lámpara estará muy caliente. Desconecte la energía y deje que la lámpara se enfríe antes de reemplazarla.
3. Las lámparas de arco emiten radiaciones ultravioletas que pueden ocasionar serias quemaduras a la piel e inflamación a los ojos. Además, las lámparas de arco operan a alta presión y muy alta temperatura. Si la lámpara se rompe, puede existir el peligro de lesiones al personal o un incendio ocasionado por las partículas de la lámpara rota que se caen.
4. Use protección para los ojos cuando vuelve a colocar una lámpara nueva.
5. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando trabaje con lámparas dañadas.
6. Si toca la lámpara con las manos, limpie la lámpara con alcohol desnaturalizado y con tela sin pelusas antes de instalar o volver a conectar la luminaria.
7. Cambie la lámpara si está dañada o deformada termicamente.

ADVERTENCIA:
INTERFERENCIA RF

1. Este es un producto de Clase A. En el ambiente de la casa este producto puede ocasionar radiointerferencia, en cuyo caso, el usuario debe tomar las medidas adecuadas.

安全性に関する注意事項

ここに記載されている製品を取り扱う場合は、まず本マニュアルおよび付属のマニュアルの安全性に関する情報と説明をすべてお読みください。また、実際に本製品を取り付けたり使用する際には、すべての注意事項および警告に留意して作業してください。

本マニュアルでは、以下の安全マークを使用しています。

注意：製品に損傷を与える危険性があります。

警告：人身事故につながる危険性があります。

感電、火災、UV 放射に対する過度の露出、および人身事故を防ぐための一般的な情報については、以下の説明をお読みください。

警告：
火災の発生を防ぐためのヒント

1. VARI*LITE® 照明器具は、ランプを使用するように設計されています。ランプを交換する際は、ランプの種類 (など）を確認するようにしてください。他の種類のランプを取り付けると危険です。
2. 照明器具は、本マニュアルの指示に従って操作するかぎり、どのようなタイプの表面にでも取り付けることができます。詳細については、本マニュアルを参照してください。
3. ヒューズを交換する場合は、同じヒューズ（同じ種類、同じクラス）を使用してください。
4. VARI*LITE® 照明器具は、可燃性物質または他の光源から必要な距離だけ離して配置してください。

警告：
感電を防ぐためのヒント

1. VARI*LITE® 照明器具は、乾燥した環境で使用するように設計されています。雨で濡れる場所や湿気の多い場所に取り付けると、照明器具が傷むことがあります。
2. VARI*LITE® 照明器具を修理点検する場合は、必ず先に電源を切ってください。
3. 照明器具の修理点検は、資格を持つ技師のみが行うようにしてください。

警告：
過度の UV 放射にさらされないためのヒント

1. VARI*LITE® 照明器具の多くは、UV 放射を生ずる HID タイプのランプを使用しています。ランプを直視することは避けてください。
2. レンズまたはシールドを使わずに照明器具を点灯すると危険です。レンズ、シールド、紫外線画面は、ひび割れや深い引っかき傷などにより、その効力が損なわれるようになったら取り替えるようにします。

警告：
人身事故を防ぐためのヒント

1. 照明器具が点灯しているときは、その外側が熱くなります。熱くなった器具やコンポーネントを取り扱う際には、適切な防具（手袋や保護用眼鏡）を使用してください。
2. 照明器具が点灯しているときは、そのランプが熱くなります。ランプを交換する場合は、照明器具の電源を切り、ランプの温度が下がるまで待ってください。ランプの裏ぶたをあけると、遮断スイッチが働いて、ランプの電源が切れる場合があります。
3. アーク灯は紫外線を放射します。この紫外線によって、ひどい火傷を負ったり、目の炎症を起こすことがあります。さらに、アーク灯は、高圧高温の状態で光を発します。そのため、万一アーク灯が破損すると、飛び散った破片で人身事故や火災が発生する危険性があります。
4. 再点灯するときには、保護用眼鏡を着用してください。
5. 損傷したランプを取り扱う場合は、適切な防具（手袋や保護用眼鏡）を着用してください。
6. 手袋を着用せずに直接手でランプを触った場合は、変性アルコールを使ってランプをきれいにし、糸くずの出ない布で拭いてから照明器具を取り付け、電源を入れるようにします。
7. 傷がついたランプや熱によって変形したランプは取り替えてください。

警告：
RF 干渉

1. 本製品は Class A に分類されます。本製品は、家庭環境において無線干渉を起こす可能性があります。その場合、使用者は適切な処置を取らなければならないことがあります。

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Introduction

About This Manual

This manual provides necessary information regarding safety, installation, operation and routine maintenance for VARI✻LITE VL440 / VL770 / VL880 Luminaires. Familiarizing yourself with this information will help you to get the most out of your product.

WARNING: It is important to read ALL accompanying safety and installation instructions to avoid damage to the product and potential injury to yourself or others.

This manual covers the following models:

Model	Part Number	Lamp Type	Color Mixing System	Dimmer	Gobo Positions	Luminaire Body Color
VL440 Spot	20.9687.0002	400W MSR Gold 400 MiniFastFit Lamp	CYM / 8 Filters	Glass Dimmer Wheel	7 Rotating / 10 Fixed (1)	Black
VL440 Spot	20.9687.0002.02	400W MSR Gold 400 MiniFastFit Lamp	CYM / 8 Filters	Glass Dimmer Wheel	7 Rotating / 10 Fixed (1)	White
VL770 Spot	20.9687.0003	700W MSR Gold 700 MiniFastFit Lamp	CYM / 8 Filters	Glass Dimmer Wheel	7 Rotating / 10 Fixed (2)	Black
VL770 Spot	20.9687.0003.02	700W MSR Gold 700 MiniFastFit Lamp	CYM / 8 Filters	Glass Dimmer Wheel	7 Rotating / 10 Fixed (2)	White
VL880 Spot	20.9687.0004	800W MSR Platinum 35 Lamp	CYM / 8 Filters	Glass Dimmer Wheel	7 Rotating / 10 Fixed (2)	Black
VL880 Spot	20.9687.0004.02	800W MSR Platinum 35 Lamp	CYM / 8 Filters	Glass Dimmer Wheel	7 Rotating / 10 Fixed (2)	White

Notes:

- For each model's power requirements, refer to "Current vs. Voltage" on page 14.
- (1) = Luminaire accepts metal and glass gobos.
- (2) = Luminaire accepts glass gobos only.

Additional Documentation

Note: Performing maintenance procedures may void the product warranty. Refer to the Vari-Lite Limited Warranty card included in the product shipping package for more information.

For more information regarding DMX512 systems, refer to the following document available from United States Institute for Theatre Technology, Inc. (USITT): Digital Data Transmission Standard for Dimmers & Controllers plus AMX 192 Analog Multiplex Data Transmission Standard for Dimmers & Controllers. (A copy of Recommended Practice for DMX512 is included.)

USITT
315 South Crouse Avenue, Suite 200
Syracuse, New York 13210-1844 USA
Phone: 800-938-7488 or +1-315-463-6463
Fax: 866-398-7488 or +1-315-463-6525
Web Site: www.usitt.org

Text Conventions

The following styles and meanings are used throughout this manual:

Style	Meaning
[Button]	Front panel button. Example: Press [Menu].
[Up] / [Down] arrows	Press either [Up] or [Down] arrow button at Menu Display.
MENU	LCD Menu Display read-out. Example: Press [Up] / [Down] arrows until LAMP appears.

Customer Service

Our Goal

At Vari-Lite, we are committed to providing you the highest quality in customer service. Our comprehensive resources are available to help your business succeed and ensure you get the full benefit of being a Vari-Lite customer. Whether your needs are telephone troubleshooting assistance, product training or technical service, our full-time staff of experienced professionals are on-hand to provide support.

How to Reach Us

For assistance in your area, call the dealer from which your product was purchased.

or Contact an Authorized Service Center

or Contact the Vari-Lite Customer Service Department, 7am - 6pm CST Monday through Friday, at the following:

phone: 1-877-VARI-LITE (1-877-827-4548) or +1-214-647-7880

e-mail: entertainment.service@philips.com

Additional Resources

For additional resources and documentation, please visit our website at www.vari-lite.com and follow the Support link.

Notes

CHAPTER 1.

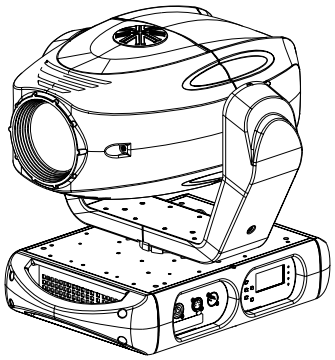
Description

This chapter contains descriptions of luminaire features and components, along with a list of accessories which are available.

- **Features**
- **Components**

Features

Overview



VL440 / VL770 / VL880 Luminaire feature highlights:

- Color Mixing System:
  - VL440, VL770, and VL880 Spot: A three filter CYM cross-fading mechanism plus a fixed color wheel with 8 interchangeable color filters and 1 open space. Fixed wheel is capable of continuous rotation for additional effects.
- Zoom Optics / Control:
  - All models feature a high-speed, precision zoom optical system with continuously variable field angle from approximately 15° to 36°; programmable over a timed range of 1.5 seconds to 20 minutes.
  - Variable beam focus to soften edges of gobos or spots.
- Gobo Wheels:
  - All models feature one rotating gobo wheel with seven rotatable, indexable gobo positions and one open position. One fixed gobo wheel with 10 easily loaded patterns and one open position. Fixed gobo wheel is capable of continuous rotation for additional effects. 17 total gobos positions.
  - VL440 Spot accepts both metal and glass gobos.
  - VL770 & VL880 Spot accept glass gobos only.
- Frost and Prism Capability: Independent, drop-in armature with frost glass. Second, independent, drop-in armature with rotating and indexable four facet prism. Both the frost and prism pieces are interchangeable.
- Intensity Control:
  - All models have a coated glass dimmer wheel provides full-field dimming designed for smooth timed fades. These models also feature a high-performance dual blade strobe system capable of ultra-fast operation.
- Source:
  - VL440 Spot: 400W MSR Gold 400 MiniFastFit Lamp.
  - VL770 Spot: 700W MSR Gold 700 MiniFastFit Lamp.
  - VL880 Spot: 800W MSR Platinum 35 Lamp.
- Pan/Tilt: Smooth, time-controlled continuous motion by way of a high-power, three-phase stepper motor system.
- Range: Pan - 540°, Tilt - 260°.
- Pan/Tilt Accuracy: 0.3° resolution.

- Weights:
  - VL440 Spot: 56 lbs. (25.5 kg)
  - VL770 Spot: 56 lbs. (25.5 kg)
  - VL880 Spot: 56 lbs. (25.5 kg)
- Spacing: All models hang on 23 inch (58.5 cm) centers.
- Operational Temperature: -20° to +122° F (-29° to +50° C)
- Control by DMX512 protocol.
- Power Requirements:
  - VL440 Spot: Standard AC power distribution from 100 - 240VAC, 50/60 Hz. The unit requires up to 6.6A (at 100V) depending on the AC supply voltage.*
  - VL770 Spot: Standard AC power distribution from 100 - 240VAC, 50/60 Hz. The unit requires up to 10.2A (at 100V) depending on the AC supply voltage.*
  - VL880 Spot: Standard AC power distribution from 100 - 240VAC, 50/60 Hz. The unit requires up to 12.0A (at 100V) depending on the AC supply voltage.*

Note: *For a breakdown of total luminaire current draw at different voltages for all models covered in this manual, see "Current vs. Voltage" on page 14.

Components

Included Items

The following illustration shows all items included with the luminaire:

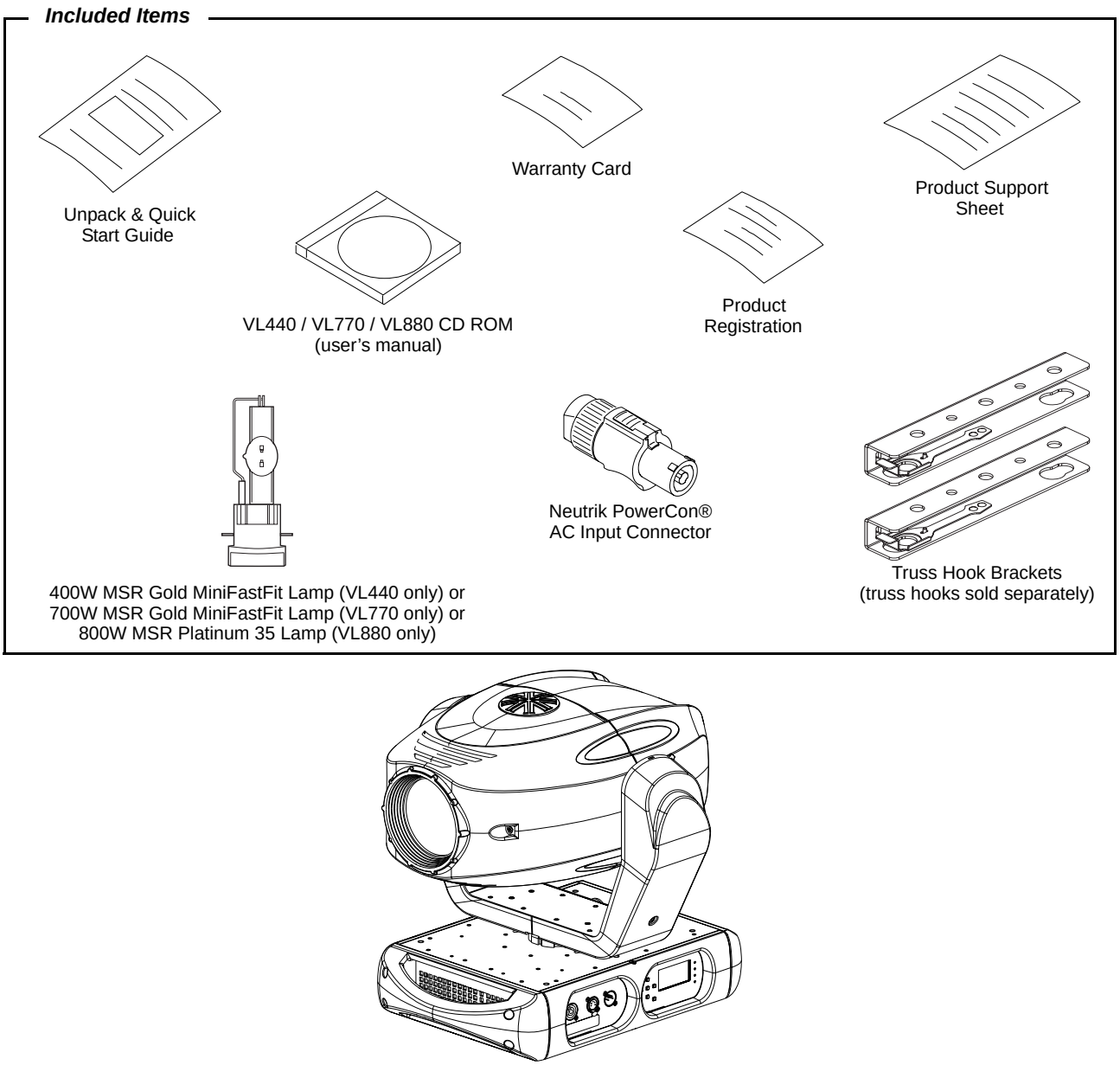

Included Items
Unpack & Quick Start Guide
Warranty Card
Product Support Sheet
VL440 / VL770 / VL880 CD ROM (user's manual)
Product Registration
Neutrik PowerCon® AC Input Connector
Truss Hook Brackets (truss hooks sold separately)
400W MSR Gold MiniFastFit Lamp (VL440 only) or
700W MSR Gold MiniFastFit Lamp (VL770 only) or
800W MSR Platinum 35 Lamp (VL880 only)
VL440 / VL770 / VL880 Spot Luminaire

Figure 1-1: VL440 / VL770 / VL880 Luminaire Included Items

Replacement Items/Accessories

The following optional and/or replacement items can be ordered directly from your Authorized VARI✻LITE Dealer or Vari-Lite. When ordering, please order by the Vari-Lite part number.

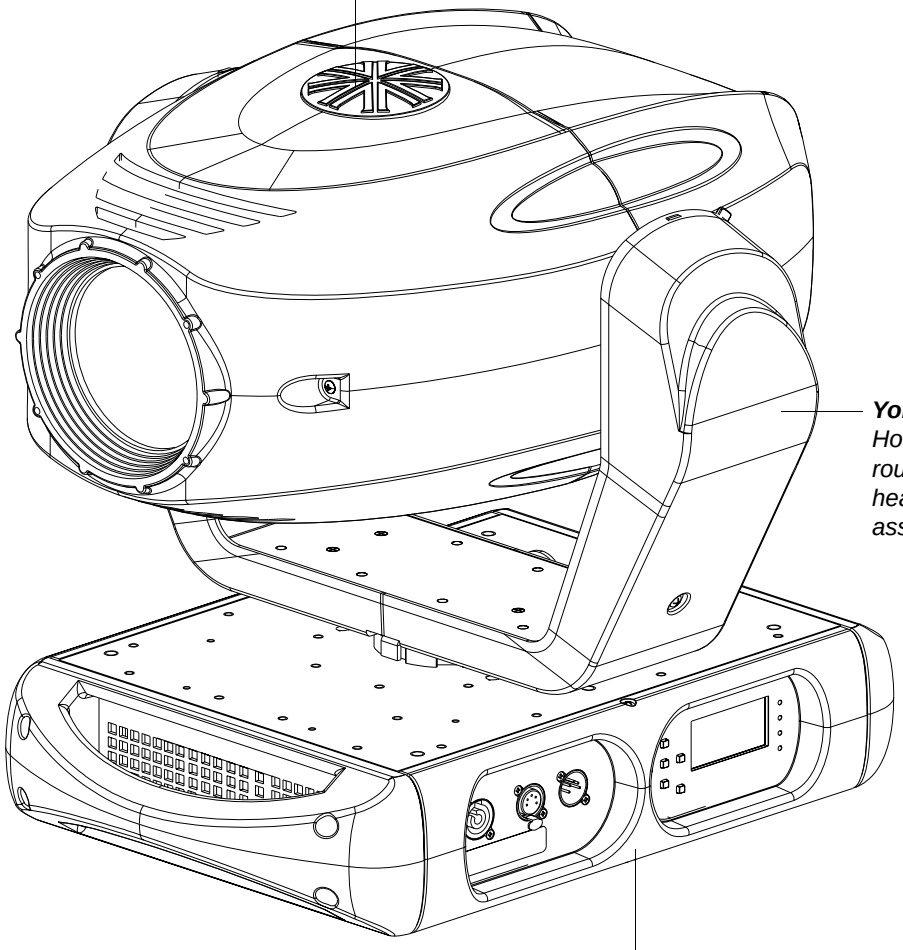
Vari-Lite Part No.	Accessory	Notes
PC1BE	AC Input Cable, PowerCon with Bare End (no connector), 1 Meter	1
PC1GP	AC Input Cable, PowerCon with Stage Pin (Male), 1 Meter	1
PC1GTL	AC Input Cable, PowerCon with Twist Lock (Male), 1 Meter	1
PC1GR	AC Input Cable, PowerCon with Edison (Male), 1 Meter	1
22.9620.0194	Safety Cable Assembly	1
25.9661.0057	DMX Termination Connector Assembly	1
28.8550.0054	USB Luminaire Programming Kit	1
55.6840.0001	Truss Hook, Mega-Clamp, Round and Square	1
55.6841.0001	Truss Hook, Mega-Claw for 2” Round Tube	1
71.9687.0400	400W MSR Gold 400 MiniFastFit Replacement Lamp	2, 5
71.9687.0700	700W MSR Gold 700 MiniFastFit Replacement Lamp	3, 5
71.9687.0800	800W MSR Platinum 35 Replacement Lamp	4, 5

Replacement Items and Accessories Notes:

1. For use with any model in this manual.
2. For use with VL440 models only.
3. For use with VL770 models only.
4. For use with VL880 models only.
5. For approved lamp types, see the latest version of Vari-Lite technical notice TN-248 in the product downloads section on the Vari-Lite web site, www.vari-lite.com.

Luminaire Components

Below is a brief description of the major assemblies of the VL440 / VL770 / VL880 Luminaires.



Luminaire Head Assembly *- Houses color system, gobos, lenses, filters, reflector, and lamp.*

Yoke Assembly *- Houses tilt motor and routes cables to / from head and enclosure assemblies.*

Enclosure Assembly *- Houses ballast, menu system, pan motor, and AC input connection, and DMX512 connections.*

CHAPTER 2.

Installation

This chapter contains instructions for installation of the luminaire. It includes connecting power and data, along with instructions for powering up the luminaire for the first time and addressing it within your system.

- **Power and Data Cabling Requirements**
- **Installation Procedures**
- **Powering Up**
- **Addressing**
- **Transporting**

Power and Data Cabling Requirements

Power

The luminaire requires standard AC power distribution from 100-240 VAC, 50/60 Hz. Current required depends on the AC supply voltage and product model. Refer to "Current vs. Voltage" on page 14 for all models covered in this manual.

Note: The mating Neutrik PowerCon connector is supplied, however, you will need to purchase or construct a cable appropriate for your application.

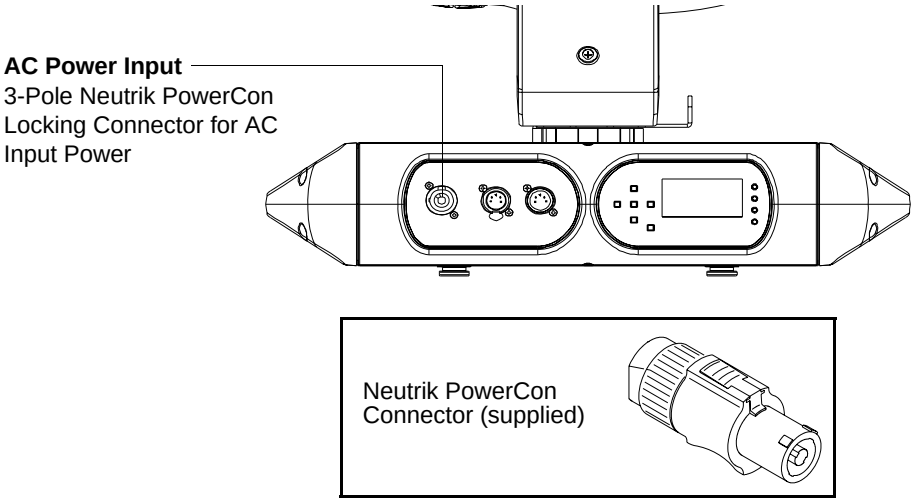


Figure 2-1: Power Connector

Depending on the application, the luminaire's AC input cable may require a different connector. If required, install a new connector meeting your requirements using the following wire color code reference:

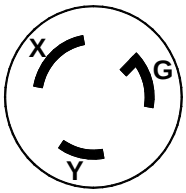
Wire*	Connection
Green/Yellow	AC Ground
Blue	AC Neutral
Brown	AC Line

* International (Harmonized) Standard

WARNING: DO NOT connect to three-phase service in countries with 240 volt power.

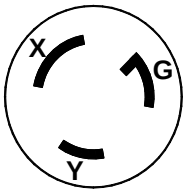
For single-phase power at 100 to 240 volts RMS:

Connection	Pin
AC Neutral	X
AC Line	Y
Ground (Earth)	G



For three-phase power at 208 volts RMS:

Connection	Pin
Phase 1	X
Phase 2	Y
Ground (Earth)	G



WARNING: It is not recommended to power any VARI✻LITE luminaire from a dimmer - even in 'NONDIM' mode. Dimmer and non-dim modules are not suitable sources of power because their output modifies the AC wave form. This may work for a short time, but will eventually result in power problems, luminaire mis-operation and/or failure and may void the luminaire's warranty.

Current vs. Voltage

The following tables provide the luminaire's current draw at specific voltages. Total Luminaire Current is calculated with the lamp on and all motors sequencing. For specific luminaire current draw, refer to:

- Table 2-1, VL440 Spot Luminaire - Current vs. Voltage (400W Lamp)
- Table 2-2, VL770 Spot Luminaire - Current vs. Voltage (700W Lamp)
- Table 2-3, VL880 Spot Luminaire - Current vs. Voltage (800W Lamp)

Table 2-1: VL440 Spot Luminaire - Current vs. Voltage (400W Lamp)

AC Voltage @ 60Hz	Total Luminaire Current (Motor + Lamp Current)
100V	6.6A
110V	6.0A
120V	5.5A
130V	5.1A
140V	4.7A
160V	4.1A
180V	3.7A
200V	3.3A
220V	3.0A
240V	2.8A

.

Table 2-2: VL770 Spot Luminaire - Current vs. Voltage (700W Lamp)

AC Voltage @ 60Hz	Total Luminaire Current (Motor + Lamp Current)
100V	10.2A
110V	9.3A
120V	8.5A
130V	7.8A
140V	7.3A
160V	6.4A
180V	5.7A
200V	5.1A
220V	4.6A
240V	4.3A

.

Table 2-3: VL880 Spot Luminaire - Current vs. Voltage (800W Lamp)

AC Voltage @ 60Hz	Total Luminaire Current (Motor + Lamp Current)
100V	12.0A
110V	10.9A
120V	10.0A
130V	9.2A
140V	8.6A
160V	7.5A
180V	6.7A
200V	6.0A
220V	5.5A
240V	5.0A

WARNING: It is not recommended to power any VARI✻LITE luminaire from a dimmer - even in 'NONDIM' mode. Dimmer and non-dim modules are not suitable sources of power because their output modifies the AC wave form. This may work for a short time, but will eventually result in power problems, luminaire mis-operation and/or failure and may void the luminaire's warranty.

Data Cables

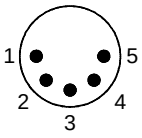
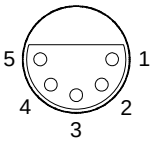
The luminaire is equipped with two, 5-pin XLR connectors for DATA IN and DATA THRU (out) applications. DATA IN requires a 5-pin, female XLR connector and DATA THRU requires a 5-pin, male XLR connector. When purchasing or constructing data cables, it is important that not only the correct cable type be used, but also quality cable to ensure a reliable DMX512 system. Your cabling should meet the following USITT DMX specification requirements:

- Suitable for use with EIA485 (RS485) operation at 250k baud.
- Characteristic impedance 85-150 ohms, nominally 120 ohms.
- Low capacitance.
- Two twisted pairs.
- Foil and braid shielded.
- 24 AWG min. gauge for runs up to 1000 feet (300m).
- 22 AWG min. gauge for runs up to 1640 feet (500m).

Note: Microphone type cables and other general purpose, two-core audio or signal cables are not suitable for use with DMX512.

Refer to the USITT Recommended Practice for DMX512 guide for additional information regarding DMX512 systems. How to obtain a copy is detailed in "Additional Documentation" on page 2.

The XLR 5-pin connectors should be wired as follows:

Pin/Wire Code to XLR Connectors						
Data Thru Cable Pinout  Male Conn.	**Pin 1** Foil & Braided Shield	**Pin 2** 1st conductor of 1st twisted pair Data (-)	**Pin 3** 2nd conductor of 1st twisted pair Data (+)	**Pin 4** 1st conductor of 2nd twisted pair Data (-)	**Pin 5** 2nd conductor of 2nd twisted pair Data (+)	Data In Cable Pinout  Female Conn.

Recommended Cable Types/Manufacturers

These are only a few of the suitable cable types. Any quality EIA485, twisted pair, 120 ohm, shielded cable will also work.

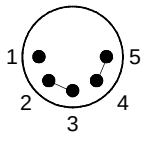
Type	Pairs	ZΩ*	Jacket	AWG	Use	Temp (F)
Belden Cables						
1215A	2	150	PVC	26	IBM Type 6 Office cable	75
1269A	2	100	PTFE	22 (Solid)	High Temp, Plenum cable	200
8102	2	100	PVC	24	UL2919	80
8132	2	120	PVC	28	UL2919	80
8162	2	100	PVC	24	UL2493	60
82729	2	100	PTFE	24	High Temp, Plenum cable	200
88102	2	100	PTFE	24	High Temp, Plenum cable	200
89696	2	100	PTFE	22	High Temp, Plenum cable	200
89729	2	100	PTFE	24	High Temp, Plenum cable	200
89855	2	100	PTFE	22	High Temp, Plenum cable	200
9729	2	100	PVC	24	UL2493	60
9804	2	100	PVC	28	UL2960	60
9829	2	100	PVC	24	UL2919	80
9842	2	120	PVC	24	UL2919	80
Proplex Cables						
PC224P	2	110	Polyure-thane	22	Heavy Duty and Portable	105
PC224T	2	110	PVC	22	UL2464	105
PC226T	3	110	PVC	22	UL2464	

* Characteristic Impedance

Termination Connector

A XLR termination connector is required at the last luminaire (or "far end of the line") to prevent signal reflections. Signal reflections may cancel out the signal at certain line lengths, resulting in errors. The terminator is also necessary for software downloads and running tests on multiple luminaires. To construct your own connector, you will need the following components:

- 5-pin, male XLR connector.
- Two 1/4W 5% 120 ohm resistors.



Solder resistors across pins 2 & 3, and 4 & 5

Note: A male termination connector is available as an accessory from Vari-Lite. See "Replacement Items/Accessories" on page 9.

Installation Procedures

Installing Lamp

In the event the lamp was packed separately during shipment, it will be necessary to install in the luminaire before use.

WARNING: Ensure that power is completely removed from luminaire when installing lamp.

CAUTION: Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use isopropyl alcohol and cotton cloth to thoroughly clean glass portion of lamp.

To install lamp (if applicable):

Step 1. Ensure power is completely removed from luminaire.

Step 2. Remove lamp from shipping box.

Step 3. Set the luminaire head horizontally.

Step 4. Engage service tilt lock to secure luminaire head in position.

Step 5. At back of luminaire, using #2 Phillips screwdriver, remove lamp socket cover by loosening the two quarter-turn captive screws. Note: lamp socket cover is connected with a safety tether.

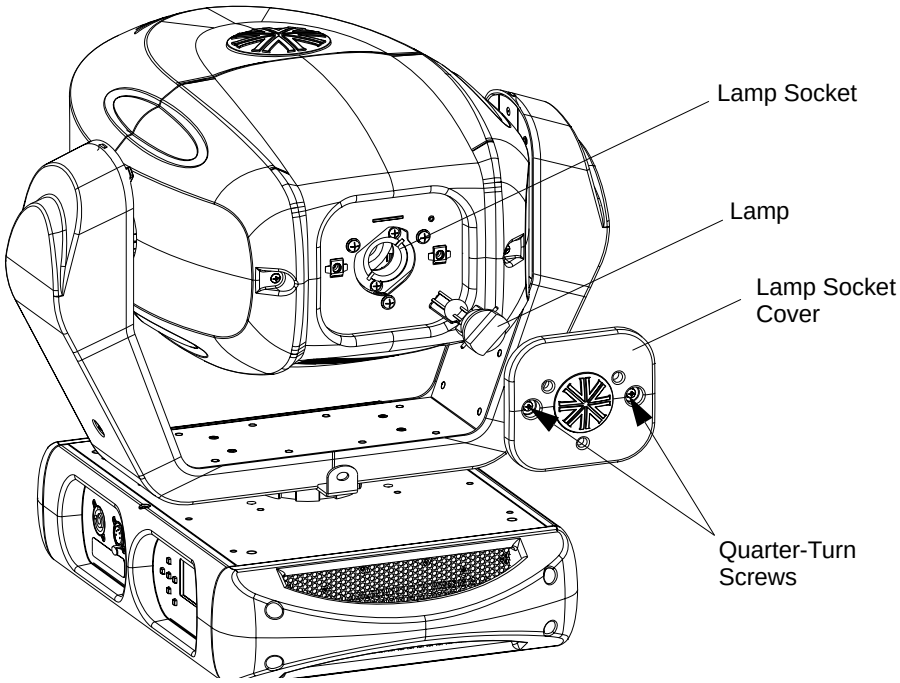


Figure 2-2: Lamp Socket Cover Removal

Step 6. As shown in Figure 2-3, align lamp tabs with lamp socket.

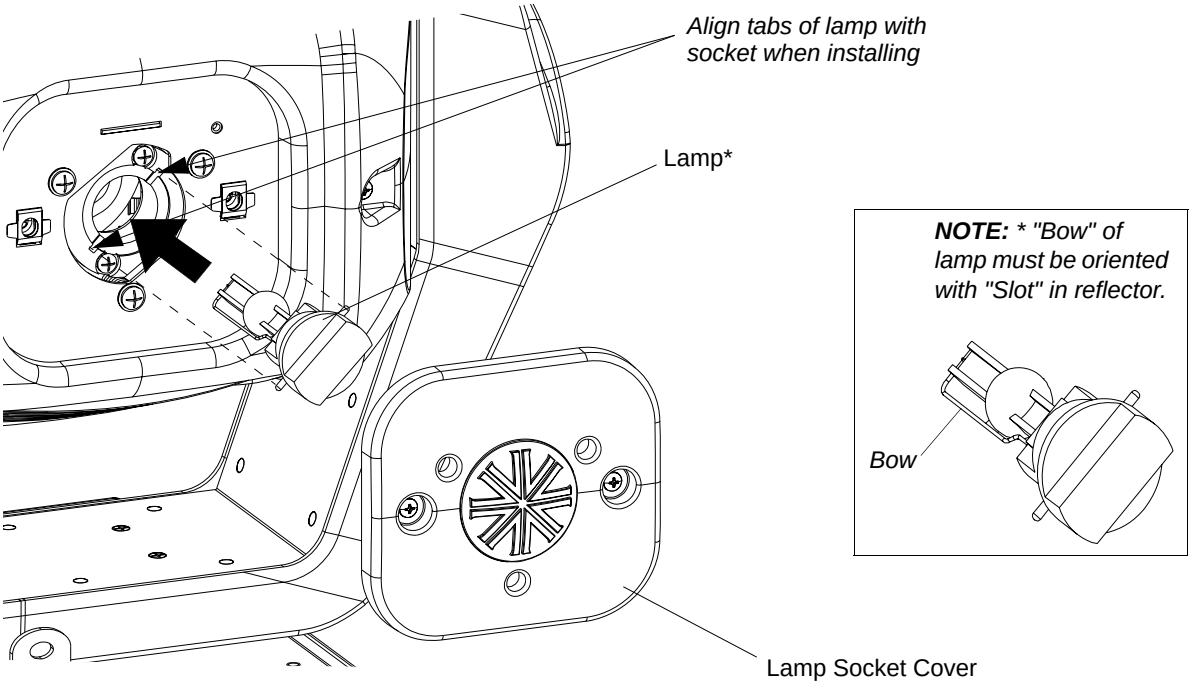

Align tabs of lamp with socket when installing
Lamp*
NOTE: * "Bow" of lamp must be oriented with "Slot" in reflector.
Bow
Lamp Socket Cover

Figure 2-3: Lamp Installation

Step 7. Install lamp fully into lamp socket, taking care not to touch lamp glass.

Step 8. Turn lamp clockwise to seat lamp into socket. Lamp base should be aligned as illustrated in Figure 2-4.

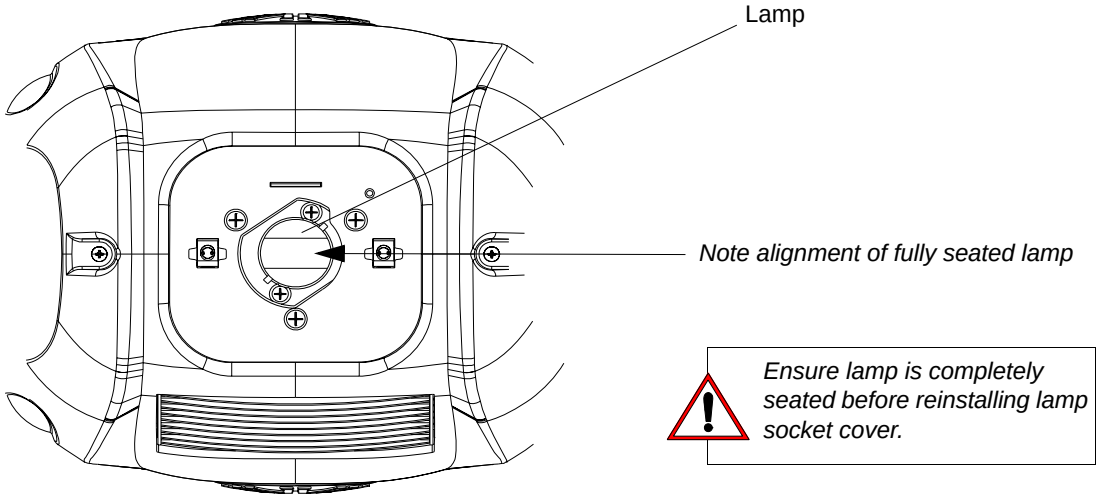


Figure 2-4: Installed Lamp

Step 9. Reinstall lamp socket cover. Make sure safety tether is completely encapsulated within lamp socket cover.

Step 10. Disengage service tilt lock to allow luminaire head to move freely.

Step 11. Align lamp as described in "Align Lamp For Maximum Beam Irradiance" on page 20.

Align Lamp For Maximum Beam Irradiance

After a new lamp is installed in the luminaire, it will be necessary to align the lamp to optimize the beam.

WARNING: Backcap and alignment screws will be HOT during lamp operation. Wear gloves and/or use tools to prevent burns.

To align lamp:

Step 1. Set intensity to 100%.

Step 2. Position beam on a white wall at a distance of 10 to 20 feet.

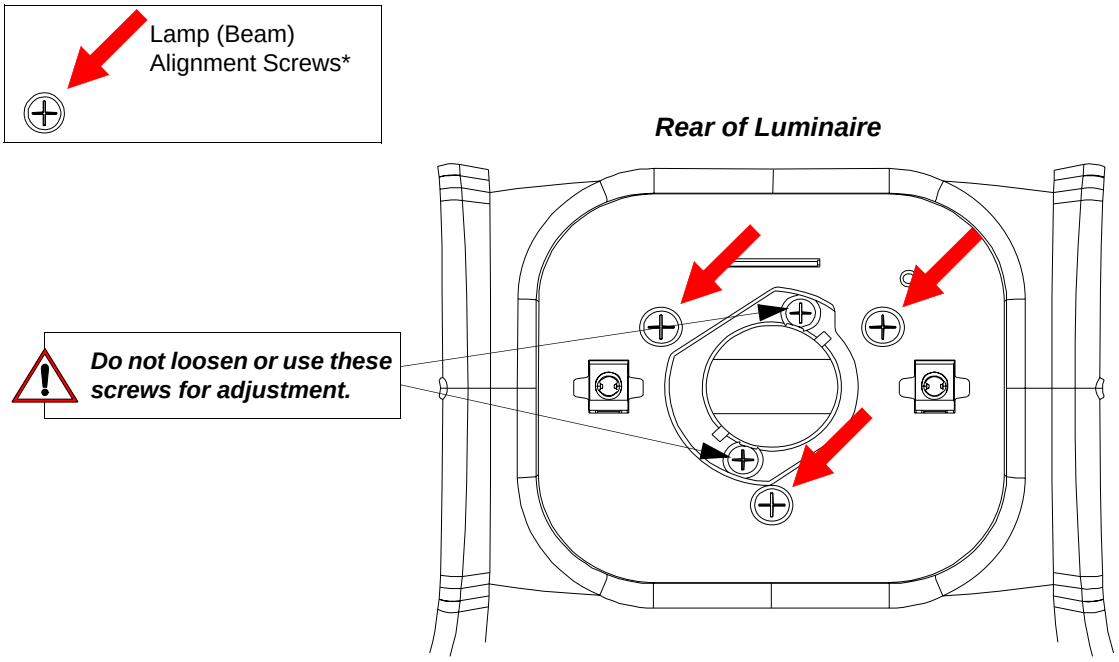
Step 3. Using console or internal luminaire menu controls, set zoom to zero and focus to a hard edge. Be sure that beam-size iris is completely opened.

Step 4. Using three alignment screws (as indicated with Red Arrows in Figure 2-5) adjust hot spot to center of beam.

Step 5. Check color uniformity as follows:

a. Position one of the color (cyan or magenta works best) at 30% of maximum.

b. Verify that beam color is uniform (if lamp is misaligned, color will be concentrated to one side of beam). If color is not uniform, readjust lamp using lamp alignment screws until color is uniform across entire beam field.



*NOTE: *Lamp Socket Cover removed for clarity. It is not necessary to remove Lamp Socket Cover to align lamp.*

Figure 2-5: Lamp Alignment Screws

Hanging the Luminaire

The VL440 / VL770 / VL880 Luminaire can be hung horizontally or vertically from any structure designed to work with the type of load created by this moving luminaire. Two mounting truss hooks or other mounting hardware are required. Many compatible truss hooks are available from different manufacturers for your particular needs.

A minimum of two hooks per luminaire is required. If mounting method does not use truss hooks, two attachment points, per luminaire, are required.

Install mounting hardware and brackets:

Step 1. Install truss hooks on two provided truss hook brackets as required.

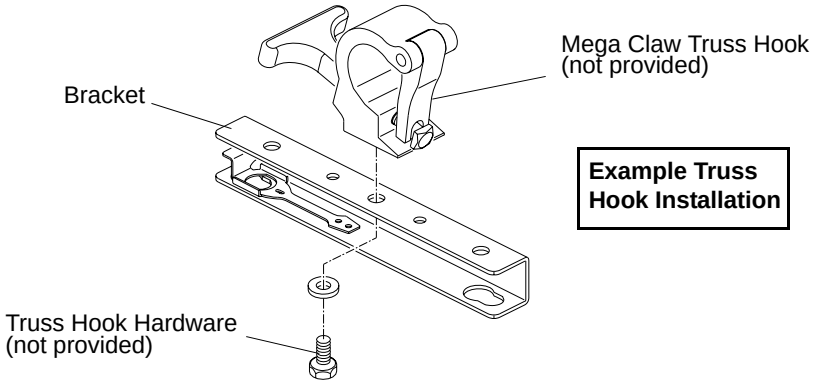


Figure 2-6: Installing Truss Hooks

Note: Various types of truss hooks can be used. The Mega Claw truss hook (as shown in the example above) as well as many other standard hooks, can be ordered separately.

Step 2. Determine required configuration of bracket installation. Brackets may be installed in either orientation as shown.

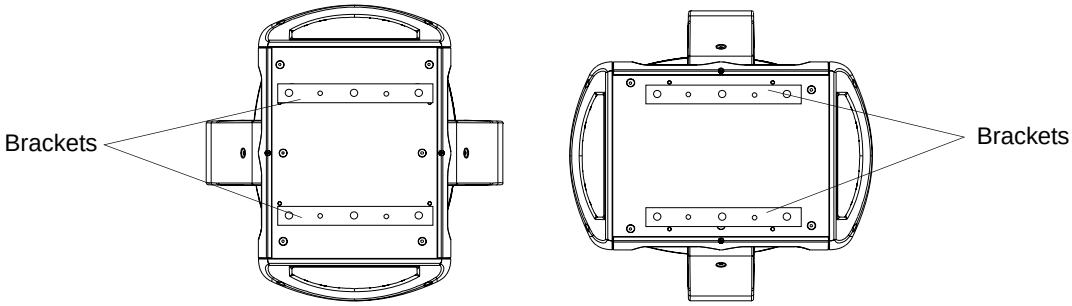


Figure 2-7: Bracket Orientation Options

Step 3. While pulling up on locking mechanism release, fit keyed holes onto raised mounting buttons at bottom of enclosure. Slide forward and release locking mechanism to lock in place. Ensure brackets are locked securely. (Always face brackets in same direction as shown.)

WARNING: Ensure that the bracket locking mechanism is fully seated after the bracket is installed on the luminaire.

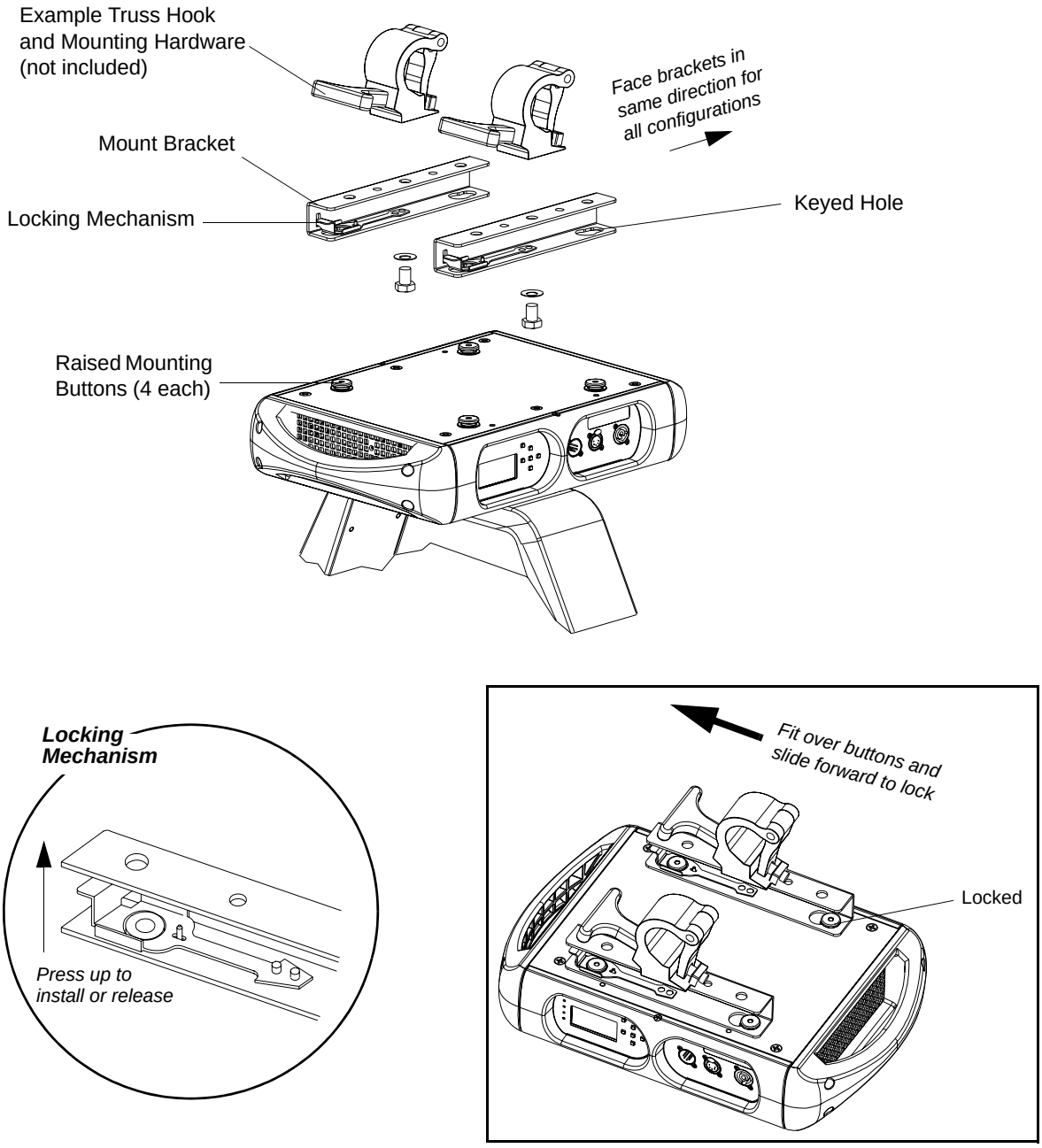


Figure 2-8: Installing Brackets on Luminaire Enclosure

Step 4. After installing truss hooks, the hooks should be oriented as shown in Figure 2-8 and Figure 2-9.

Installing in Truss:

Step 1. Using two people, lift luminaire into mounting position.

Step 2. Secure in place with truss hook. Ensure truss hook hardware that locks hook in place (e.g. wing bolt) is properly tightened and that luminaire is fully supported.

Step 3. Attach safety cable (as required) as follows (refer to Figure 2-9):

a. Connect one end of cable to luminaire enclosure handle.

b. Loop at least once around truss/pipe and attach other end of cable to other enclosure handle.

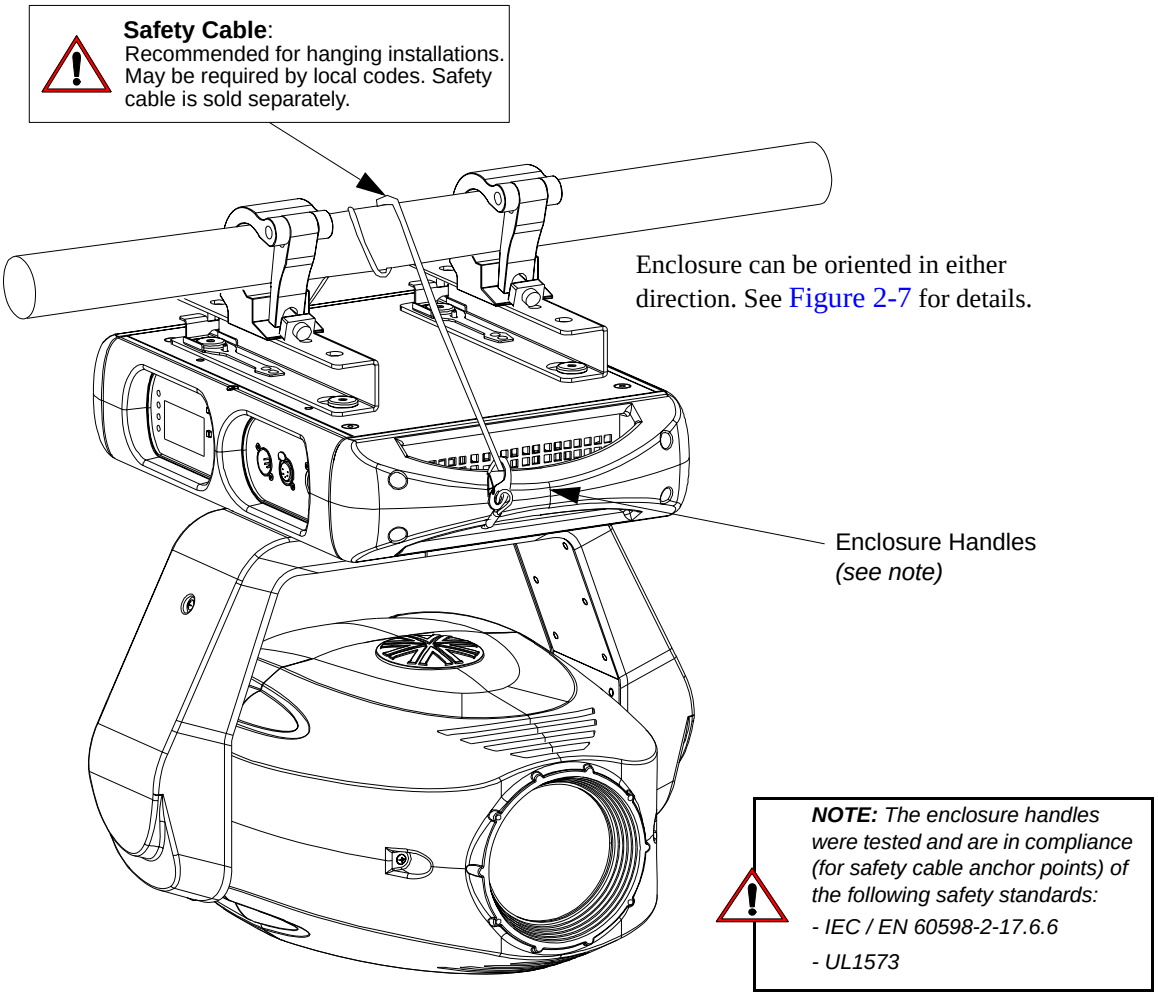
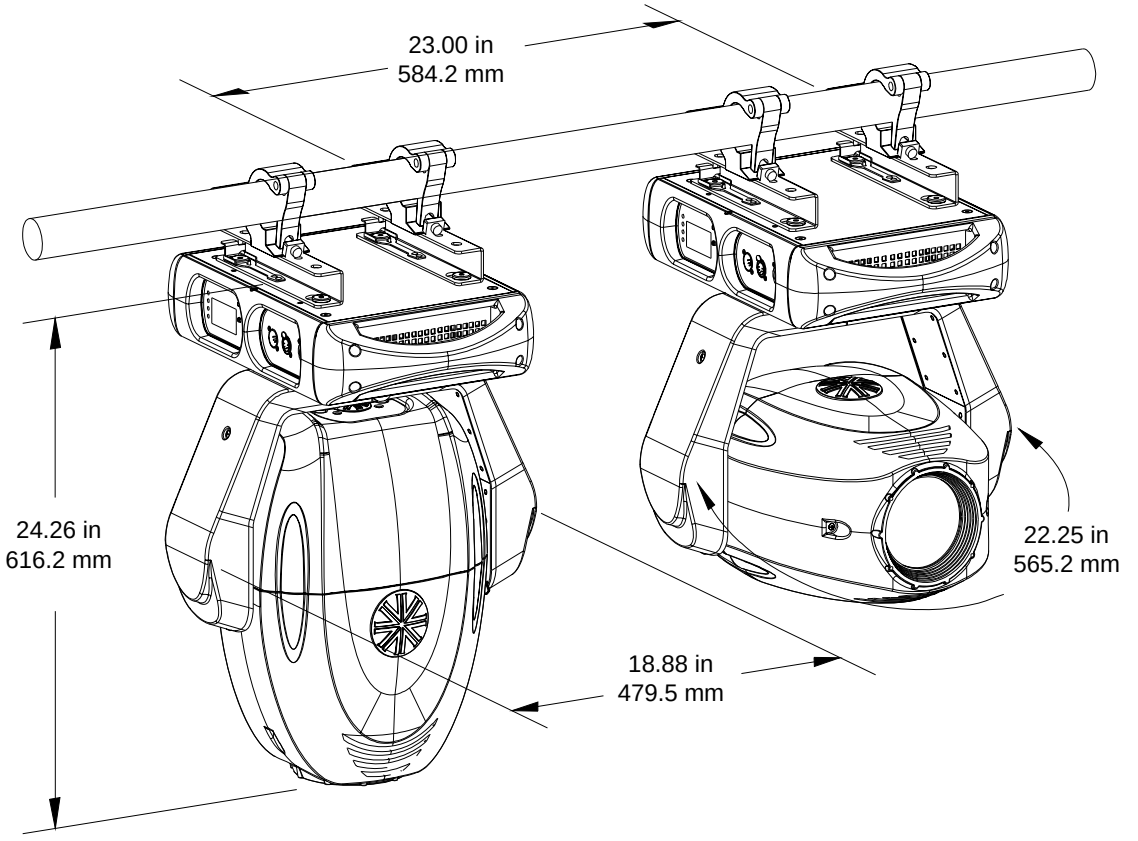

Safety Cable:
Recommended for hanging installations. May be required by local codes. Safety cable is sold separately.
Enclosure can be oriented in either direction. See Figure 2-7 for details.
Enclosure Handles
(see note)
NOTE: *The enclosure handles were tested and are in compliance (for safety cable anchor points) of the following safety standards:*
- IEC / EN 60598-2-17.6.6
- UL1573

Figure 2-9: Safety Cable Installation

Step 4. Make sure service tilt and pan locks are disengaged so luminaire moves freely.

Step 5. Connect power and data cables according to procedure given in "Connecting Data and Power" on page 25.



Safety Cable:
Recommended for hanging installations. May be required by local codes. Safety cable is sold separately.

Figure 2-10: Hanging Dimensions and Clearances

Floor Mounting the Luminaire

All luminaires included in this manual are designed to sit directly on its base in a floor installation application. When used in this type of application, be sure to leave enough space around the luminaire to allow proper, uninterrupted airflow for cooling and movement.

Connecting Data and Power

A maximum of 32 luminaires may be connected in any one DMX data link.

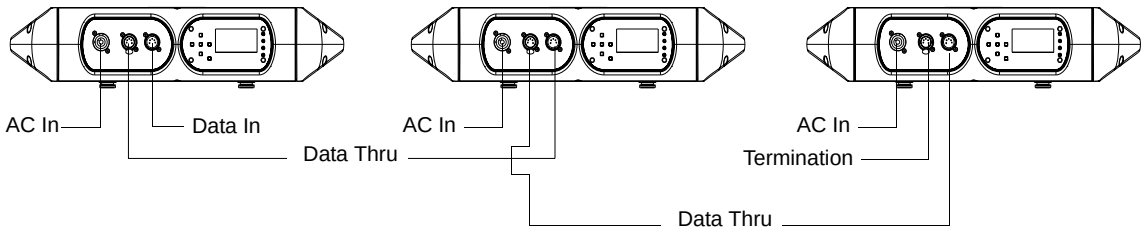
Note: This maximum limit applies to the luminaire "daisy chain" only. Your system or console may require fewer luminaires on a single data link path. Consult your console documentation for more information.

To connect power and data:

Step 1. Connect data cable from console to first luminaire in chain at DATA IN connector.

Step 2. If required, connect additional data cables from DATA THRU connectors to DATA IN connectors of remaining luminaires in link.

Step 3. At last luminaire in link, install male termination connector at DATA THRU connector. (Luminaires and other devices on the same DMX chain may not function properly without termination.)



VL440 / VL770 / VL880 Luminaire Channel Requirements

Model	DMX512 Channels
VL440 Spot	30 Channels
VL770 Spot	30 Channels
VL880 Spot	30 Channels

Figure 2-11: Data Link

Step 4. Connect AC Input Cable connector to power input source.

Step 5. Dress AC input and data cables and secure them so that they will not interfere with luminaire head and yoke movement.

Powering Up

Power-Up Procedure

All Models

When the luminaire is powered up for the first time, the default setting is enabled and the lamp will remain off. When AC power is applied, the luminaire will immediately begin a calibration sequence that steps it through full pan and tilt movements. The internal color and beam mechanisms will also move through a full range of motion. After calibration, the luminaire head will either stop at its "home" position (which positions the pan axis at mid-rotation and the head parallel to the yoke with the lens pointing away from the luminaire enclosure) or move to its current DMX-defined position if DMX data is present. All internal mechanisms also move to their "home" or DMX-defined positions.

CAUTION: Before applying power, be sure the luminaire is hung (or positioned), and the service tilt and pan locks are disengaged, so that the head and yoke can move freely without restriction.

To power up:

Step 1. At each luminaire, apply power connecting the power cable to the unit.

Step 2. Luminaire will automatically step through calibration and stop at "home" position (only if DMX is not present).

Addressing

Program Starting Address

The address setting for DMX console controlled systems is entered using the Menu Display (refer to "Menu Operation" on page 64). The luminaire retains the DMX address even if power is removed.

Note: Refer to your console operating instructions for specific information regarding its addressing requirements.

Program a DMX starting address:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Address appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows to scroll to starting address.

Step 4. Press [Enter] to set.

Program Starting Address Without Calibrating Luminaire

It is possible to bypass the calibration sequence and go directly to the Menu Display programming in order to pre-program an address setting.

Program starting address without calibrating luminaire:

- While powering up luminaire, press and hold [Menu].
- When display changes from "Starting" to the DMX address, program address as in Program Starting Address above.

Note: The luminaire will require a reset to restore control.

Transporting

Overview

When shipping or transporting VARI✳LITE Luminaires, Vari-Lite recommends that the luminaire(s) be sufficiently protected against any (including, but not limited to) shock, vibration, drops, jarring, exposure to the environment, etc.

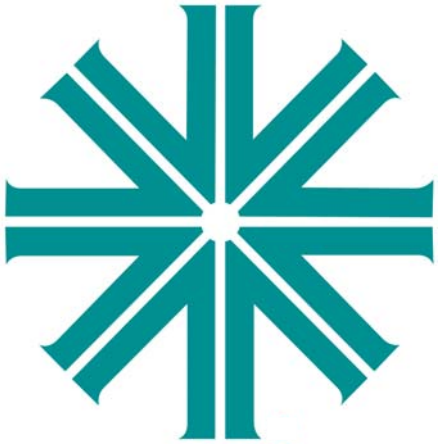
Failure to sufficiently protect any VARI✳LITE luminaire during shipping or transportation will result in damage and void the luminaire's warranty. Vari-Lite will not be responsible for any shipping damage or breakage of any product under any circumstances. Vari-Lite will not be responsible for any third party case manufacturer's cases.

Note: As with all automated luminaires, proper handling and suitable protective shipping cases should be used when transporting fixtures to reduce the risk of damage. For more information, please refer to Vari-Lite technical notice (TN-235) "Transportation and Shipping Case Requirements" in the "Support" area of the Vari-Lite web site.

Transportation and Shipping Case Requirements

Cases to transport VARI✳LITE luminaires should meet the following loading requirements:

- Luminaire head, yoke, and enclosure sub-assemblies shall be equally supported and constrained where no one sub-assembly (head, yoke, or enclosure) fully supports the entire mass of the luminaire.
- The interior of the case shall be of high quality and uniform density foam. The foam shall be of the same type and density throughout as to equally and uniformly support loading at every contact surface.
- The case shall, when laid on any of its six (6) surfaces, maintain the loading requirements outlined above.
- All cases not meeting the aforementioned loading requirements, with wheels, shall have markings on the exterior of the case that the unit is to be transported on it wheels only (e.g. "Case must be transported and remain [at all times] on its wheels").



CHAPTER 3.

Operation

This chapter contains instructions for operating the luminaire using DMX control and for updating the internal software.

- **Color Control & Gobos**
- **DMX Operation**
- **Luminaire Timing**
- **Updating Software**

Color Control & Gobos

Color control and gobos depends on the model purchased. The following is a brief description of each model's color control and gobo projection capabilities.

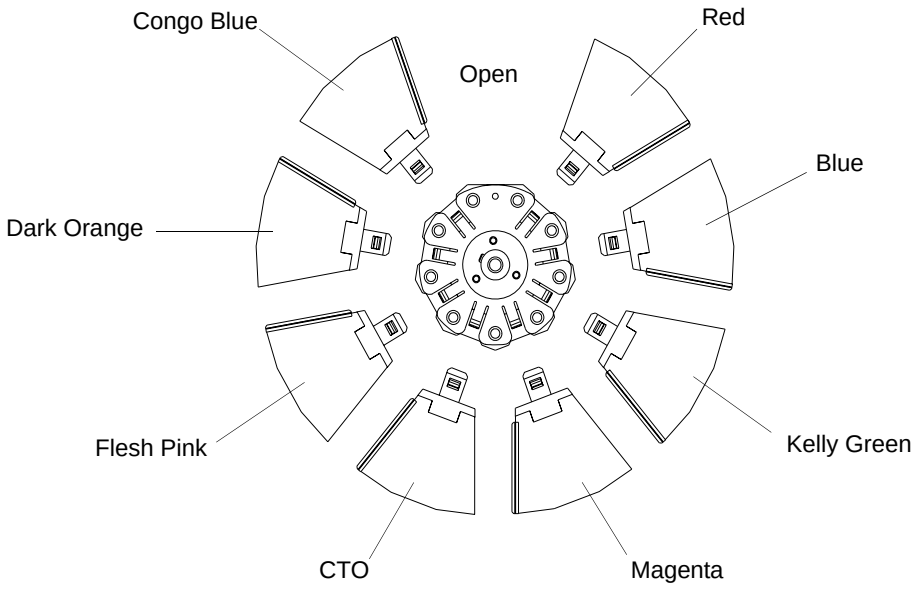
VL440 Spot Luminaire

Color Mixing

The VL440 Spot luminaire provides full CYM color cross-fading and one fixed color wheel with 8 fixed colors for rich color projection and snap color changes.

Table 1: VL440 Spot Color Wheel - Colors and Positions

Position	Filter Color	Filter Part Number
0 (Open)	None	None
1	Red	21.9687.0431
2	Blue	21.9687.0436
3	Kelly Green	21.9687.0434
4	Magenta	21.9687.0433
5	CTO	21.9687.0407
6	Flesh Pink	21.9687.0441
7	Dark Orange	21.9687.0439
8	Congo Blue	21.9687.0435



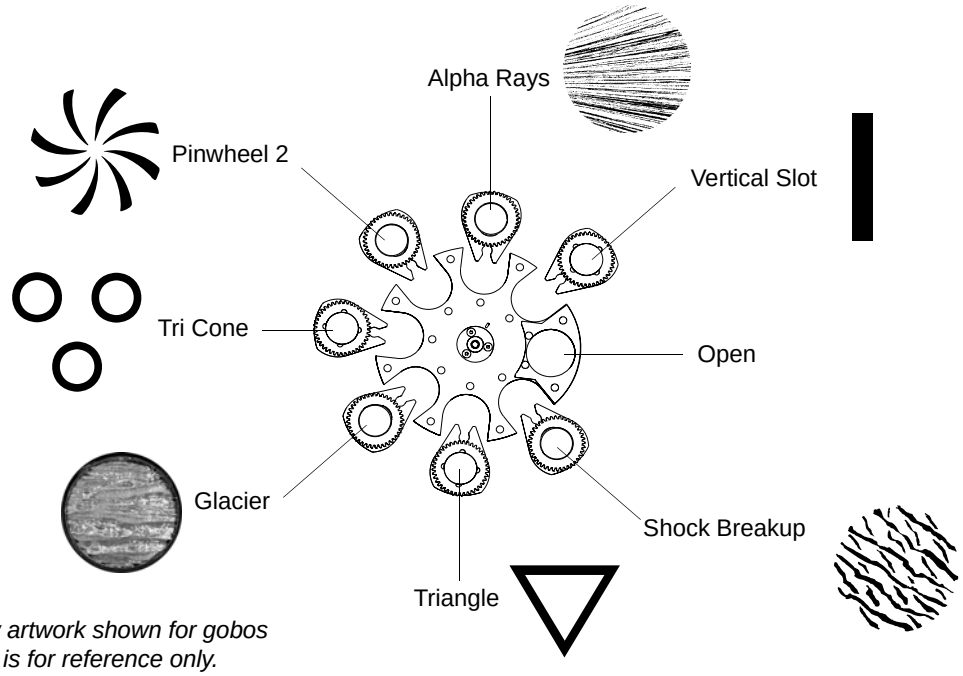
Gobos

The VL440 Spot Luminaire contains two gobo wheels:

- One rotating gobo wheel with seven rotatable, indexable gobo positions (refer to Table 2, “VL440 Spot Rotating Gobo Wheel - Effects and Positions,” on page 31).
- One fixed gobo wheel with ten easily loaded patterns and one open position capable of continuous rotation for additional effects (refer to Table 3, “VL440 Spot Fixed Gobo Wheel - Effects and Positions,” on page 32).
- VL440 spot luminaires accept glass and metal gobos. Note, VL770 and VL880 spot luminaires accept glass gobos only.

Table 2: VL440 Spot Rotating Gobo Wheel - Effects and Positions

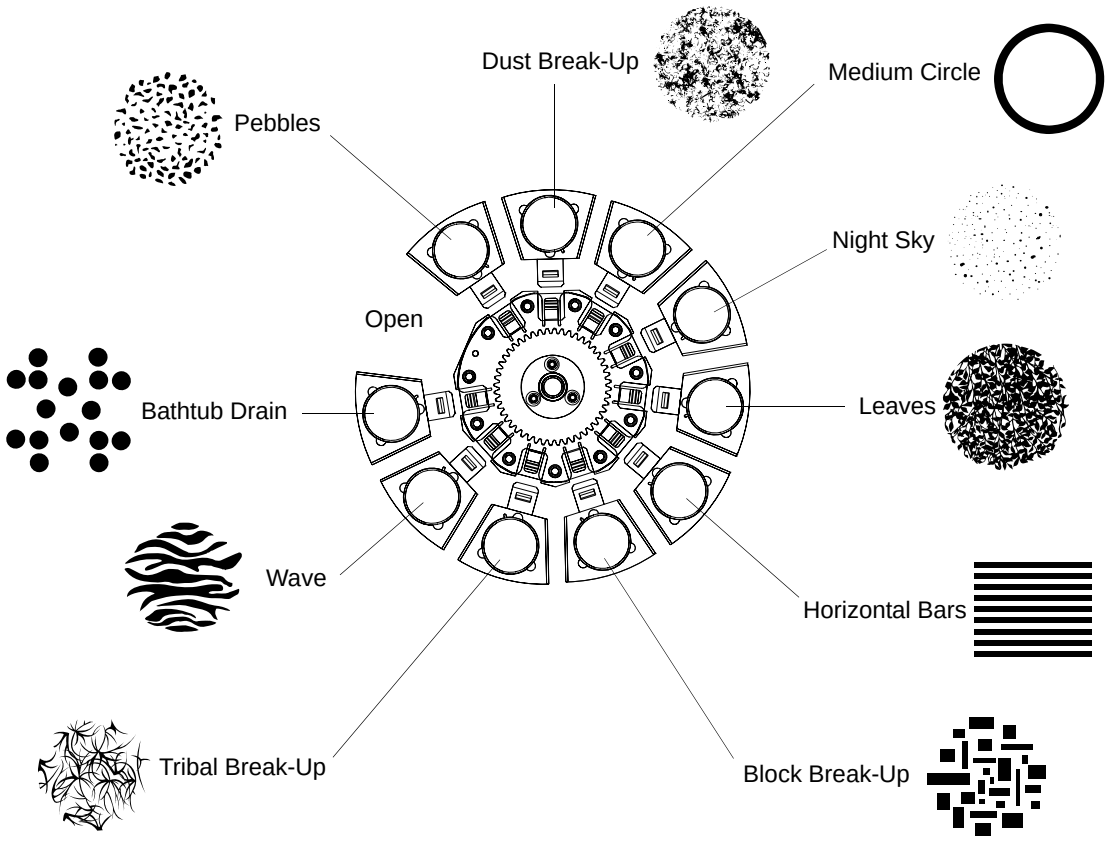
Position	Gobo	Gobo Part Number
0 (Open)	None	None
1	Vertical Slot	21.6004.4011
2	Alpha Rays	21.6004.7029
3	Pinwheel 2	21.6004.4322
4	Tri Cone	21.6004.6008
5	Glacier *(gag)*	21.9687.8002
6	Triangle	21.6004.4009
7	Shock Breakup	21.6004.7018



Note: raw artwork shown for gobos and gags is for reference only.

Table 3: VL440 Spot Fixed Gobo Wheel - Effects and Positions

Position	Gobo	Gobo Part Number
0 (Open)	None	None
1	Pebbles	41.6004.7002
2	Dust Breakup	41.6004.7025
3	Medium Circle	41.6004.6001
4	Night Sky	41.6004.5011
5	Leaves	41.6004.5501
6	Horizontal Bars	41.6004.4201
7	Block Breakup	41.6004.7015
8	Tribal Breakup	41.6004.5523
9	Wave	41.6004.7008
10	Bathtub Drain	41.6004.4001



Note: raw artwork shown for gobos and gags is for reference only.

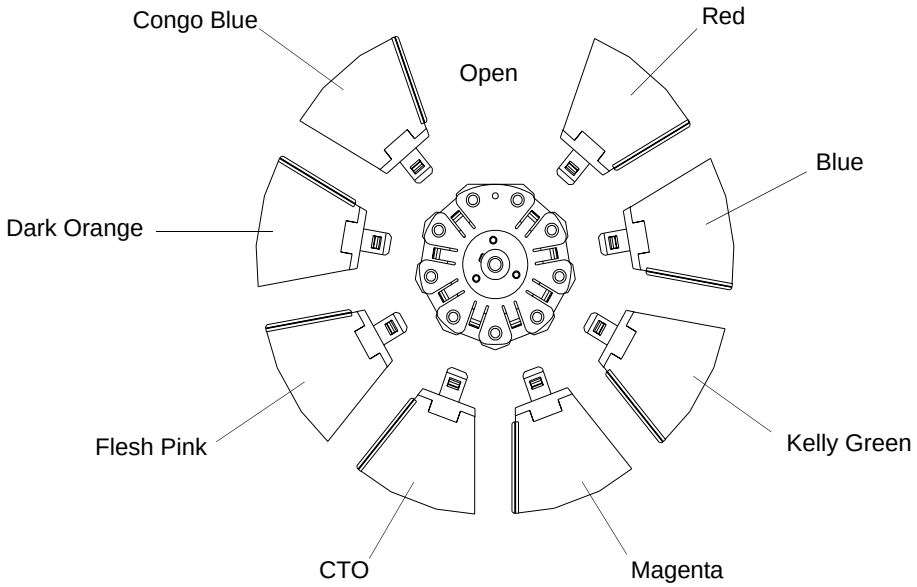
VL770 Spot Luminaire

Color Mixing

The VL770 Spot luminaire provides full CYM color cross-fading and one fixed color wheel with 8 fixed colors for rich color projection and snap color changes.

Table 4: VL770 Spot Color Wheel - Colors and Positions

Position	Filter Color	Filter Part Number
0 (Open)	None	None
1	Red	21.9687.0431
2	Blue	21.9687.0436
3	Kelly Green	21.9687.0434
4	Magenta	21.9687.0433
5	CTO	21.9687.0407
6	Flesh Pink	21.9687.0441
7	Dark Orange	21.9687.0439
8	Congo Blue	21.9687.0435



Gobos

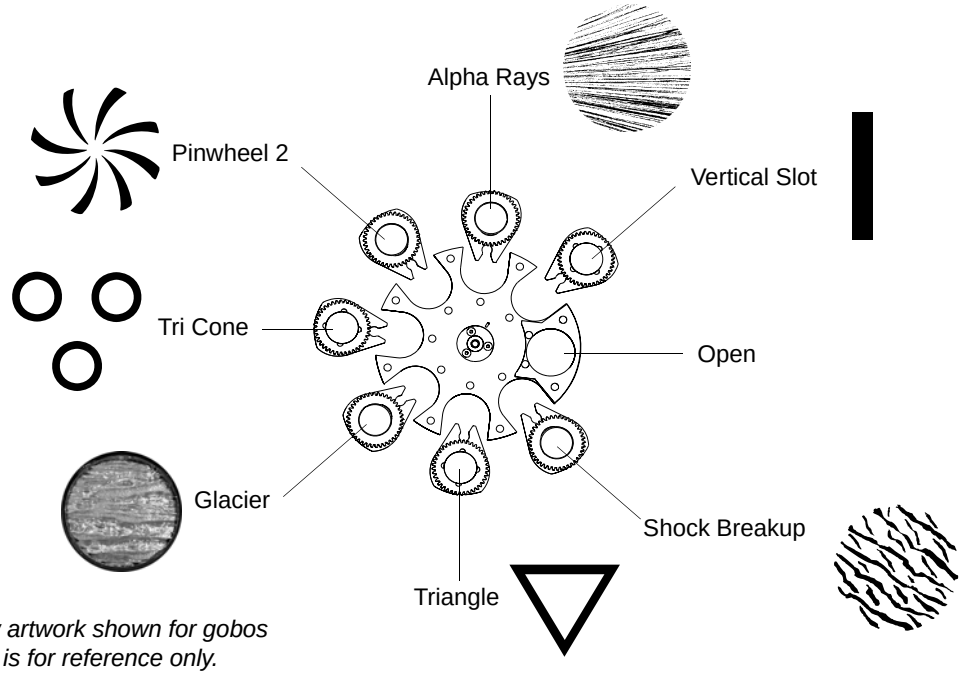
The VL770 Spot Luminaire contains two gobo wheels:

- One rotating gobo wheel with seven rotatable, indexable gobo positions (refer to Table 5, "VL770 Spot Rotating Gobo Wheel - Effects and Positions," on page 34).
- One fixed gobo wheel with ten easily loaded patterns and one open position capable of continuous rotation for additional effects (refer to Table 6, "VL770 Spot Fixed Gobo Wheel - Effects and Positions," on page 35).

CAUTION: VL770 spot luminaires accept glass gobos only. Use of metal gobos in VL770 spot luminaires may damage gobo assembly and will void the luminaire warranty.

Table 5: VL770 Spot Rotating Gobo Wheel - Effects and Positions

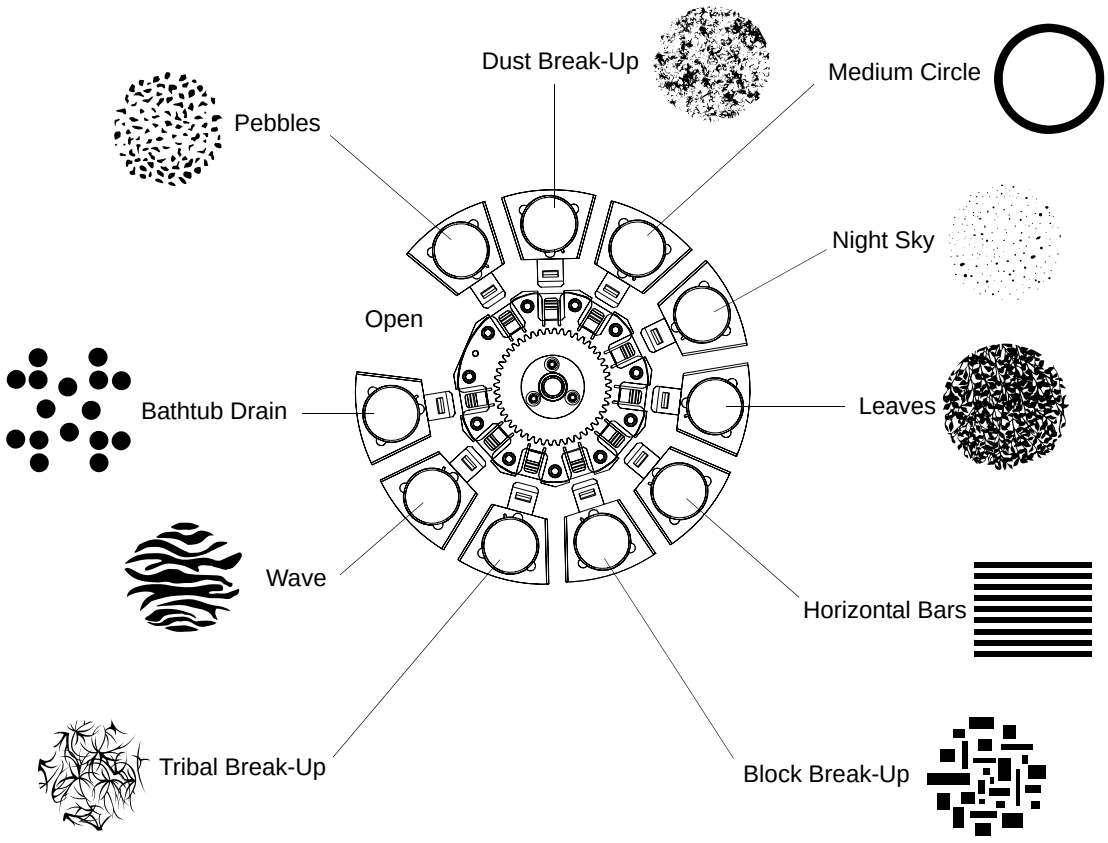
Position	Gobo	Gobo Part Number
0 (Open)	None	None
1	Vertical Slot	21.6004.4011
2	Alpha Rays	21.6004.7029
3	Pinwheel 2	21.6004.4322
4	Tri Cone	21.6004.6008
5	Glacier *(gag)*	21.9687.8002
6	Triangle	21.6004.4009
7	Shock Breakup	21.6004.7018



Note: raw artwork shown for gobos and gags is for reference only.

Table 6: VL770 Spot Fixed Gobo Wheel - Effects and Positions

Position	Gobo	Gobo Part Number
0 (Open)	None	None
1	Pebbles	41.6004.7002
2	Dust Breakup	41.6004.7025
3	Medium Circle	41.6004.6001
4	Night Sky	41.6004.5011
5	Leaves	41.6004.5501
6	Horizontal Bars	41.6004.4201
7	Block Breakup	41.6004.7015
8	Tribal Breakup	41.6004.5523
9	Wave	41.6004.7008
10	Bathtub Drain	41.6004.4001



Note: raw artwork shown for gobos and gags is for reference only.

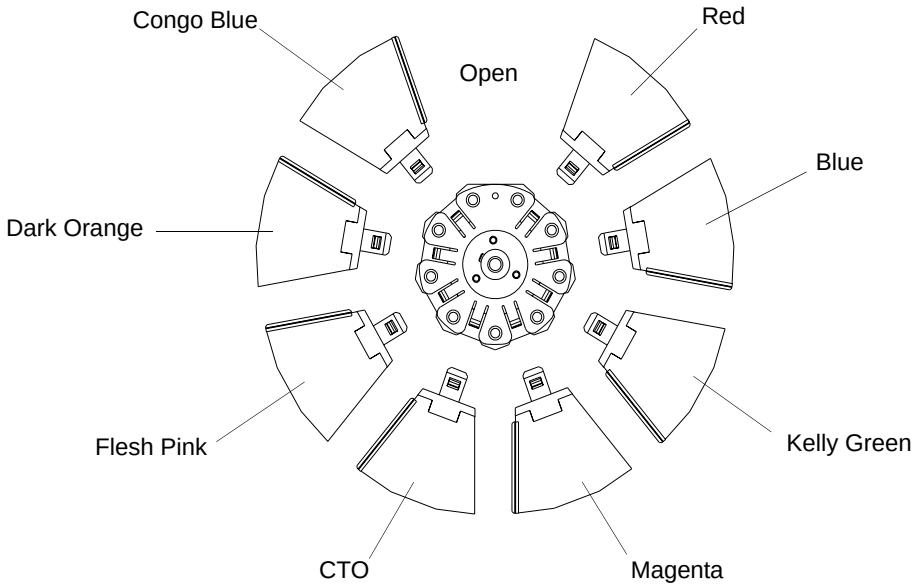
VL880 Spot Luminaire

Color Mixing

The VL880 Spot luminaire provides full CYM color cross-fading and one fixed color wheel with 8 fixed colors for rich color projection and snap color changes.

Table 7: VL880 Spot Color Wheel - Colors and Positions

Position	Filter Color	Filter Part Number
0 (Open)	None	None
1	Red	21.9687.0431
2	Blue	21.9687.0436
3	Kelly Green	21.9687.0434
4	Magenta	21.9687.0433
5	CTO	21.9687.0407
6	Flesh Pink	21.9687.0441
7	Dark Orange	21.9687.0439
8	Congo Blue	21.9687.0435



Gobos

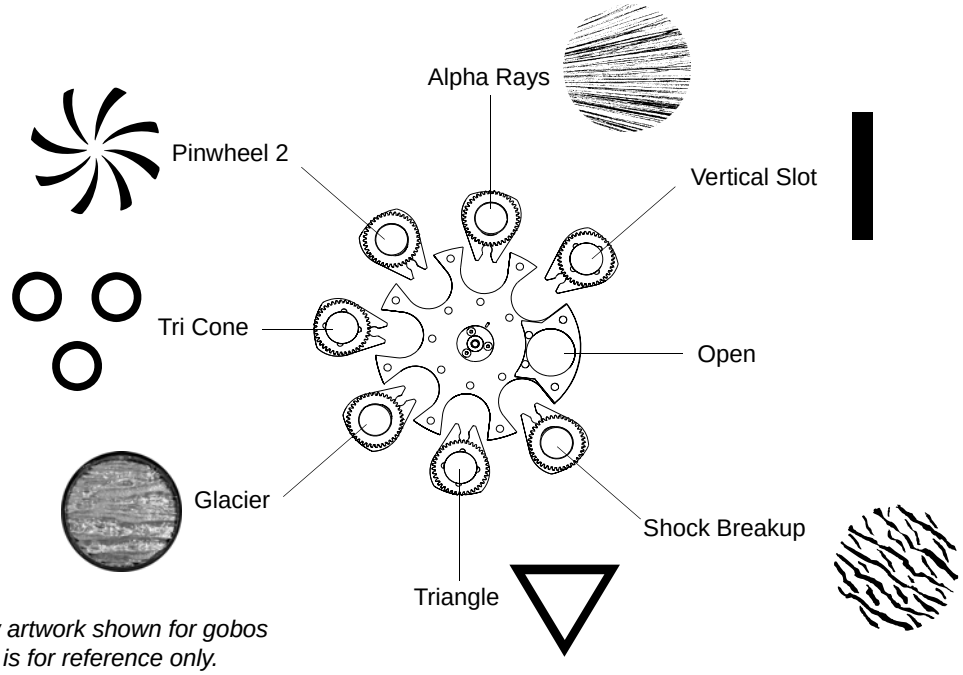
The VL880 Spot Luminaire contains two gobo wheels:

- One rotating gobo wheel with seven rotatable, indexable gobo positions (refer to Table 8, “VL880 Spot Rotating Gobo Wheel - Effects and Positions,” on page 37).
- One fixed gobo wheel with ten easily loaded patterns and one open position capable of continuous rotation for additional effects (refer to Table 9, “VL880 Spot Fixed Gobo Wheel - Effects and Positions,” on page 38).

CAUTION: VL880 spot luminaires accept glass gobos only. Use of metal gobos in VL880 spot luminaires may damage gobo assembly and will void the luminaire warranty.

Table 8: VL880 Spot Rotating Gobo Wheel - Effects and Positions

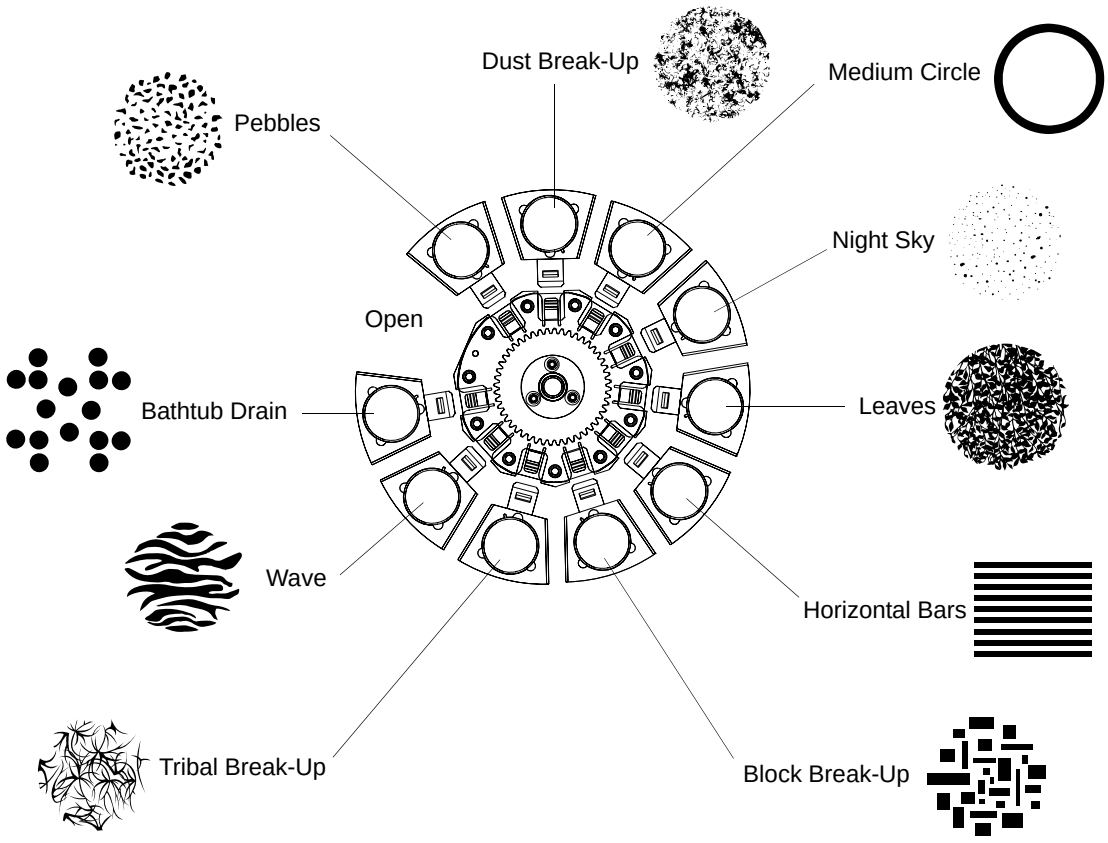
Position	Gobo	Gobo Part Number
0 (Open)	None	None
1	Vertical Slot	21.6004.4011
2	Alpha Rays	21.6004.7029
3	Pinwheel 2	21.6004.4322
4	Tri Cone	21.6004.6008
5	Glacier *(gag)*	21.9687.8002
6	Triangle	21.6004.4009
7	Shock Breakup	21.6004.7018



Note: raw artwork shown for gobos and gags is for reference only.

Table 9: VL880 Spot Fixed Gobo Wheel - Effects and Positions

Position	Gobo	Gobo Part Number
0 (Open)	None	None
1	Pebbles	41.6004.7002
2	Dust Breakup	41.6004.7025
3	Medium Circle	41.6004.6001
4	Night Sky	41.6004.5011
5	Leaves	41.6004.5501
6	Horizontal Bars	41.6004.4201
7	Block Breakup	41.6004.7015
8	Tribal Breakup	41.6004.5523
9	Wave	41.6004.7008
10	Bathtub Drain	41.6004.4001



Note: raw artwork shown for gobos and gags is for reference only.

DMX Operation

This section is contains individual DMX channel maps for each luminaire covered in this manual - VL440 Spot, VL770 Spot, and VL880 Spot. Refer to the corresponding DMX channel map for your fixture.

- VL440 Spot Channel Mapping
- VL770 Spot Channel Mapping
- VL880 Spot Channel Mapping

VL440 Spot Channel Mapping

These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence.

Table 10: VL440 Spot Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description
1	Intensity	0 (closed) - 255 (open)	0 - 100%	0	Linear Intensity control from 0 (closed) to 255 (open).
2	Pan Hi Byte	0 - 65535	0 - 100%	32768	16 bit control of Pan 540°of movement.
3	Pan Lo Byte				
4	Tilt Hi Byte	0 - 65535	0 - 100%	32768	16 bit control of Tilt 260° of movement.
5	Tilt Lo Byte				
6	Edge	0 - 255	0 - 100%	0	Controls Edge lens from 0 to 255.
7	Zoom	0 - 255	0 - 100%	0	Controls zoom assy. 0 (narrow) to 255 (wide).
8	Cyan	0 - 255	0 - 100%	0	Controls Cyan color wheel as follows: Open to Full Saturation = DMX 0 - 216
9	Yellow	0 - 255	0 - 100%	0	Controls Yellow color wheel as follows: Open to Full Saturation = DMX 0 - 216
10	Magenta	0 - 255	0 - 100%	0	Controls Magenta color wheel as follows: Open to Full Saturation = DMX 0 - 216
11	Color Wheel	0 - 255	0 - 100%	0	Controls Static Color Wheel. Linear control from 0 to 216. From 217 - 255 will spin the color wheel in either direction. **Bold** number indicates center values for each color. Open (No Color) = DMX **0** (0 - 14) Red = DMX **24** (15 - 34) Blue = DMX **47** (35 - 58) Kelly Green = DMX **72** 59 - 82 Magenta = DMX **95** (83 - 106) CTO = DMX **119** (107 - 130) Flesh Pink = DMX **143** (131 - 156) Dark Orange = DMX **168** (157 - 179) Congo Blue = DMX **191** (180 - 201) Open (No Color) = DMX 202 - 216 Spin Fast to Slow = DMX 217 - 234 Stop = DMX 235 - 237 Spin Slow to Fast = DMX 238 - 255

Table 10: VL440 Spot Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description
12	Fixed Gobo Wheel	0 - 255	0 - 100%	0	Controls Fixed Gobo Wheel. Linear control from Wheel 0 to 216. From 217 to 255 will give different speeds of wheel spin. **Bold** type below denotes center values.(note, half gobo positioning is not possible) Open (No Gobo) = DMX **0** (0 - 9) Gobo 1 = DMX **18** (10 - 27) Gobo 2 = DMX **36** (28 - 45) Gobo 3 = DMX **54** (46 - 63) Gobo 4 = DMX **72** (64 - 81) Gobo 5 = DMX **90** (82 - 99) Gobo 6 = DMX **108** (100 - 117) Gobo 7 = DMX **126** (118 - 135) Gobo 8 = DMX **144** (136 - 153) Gobo 9 = DMX **162** (154 - 171) Gobo 10 = DMX **180** (172 - 189) Open (No Gobo) = DMX **198** (190 - 216) Spin Fast to Slow = DMX 217 - 234 Stop = DMX 235 - 237 Spin Slow to Fast = DMX 238 - 255
13	Rotating Gobo Wheel	0 - 255	0 - 100%	0	Controls Rotating Gobo Wheel using the following (note, half gobo positioning is not possible): Open Index (No Gobo) DMX = 0 Gobo 1 (Index) DMX = 14 Gobo 2 (Index) DMX = 28 Gobo 3 (Index) DMX = 42 Gobo 4 (Index) DMX = 56 Gobo 5 (Index) DMX = 70 Gobo 6 (Index) DMX = 84 Gobo 7 (Index) DMX = 98 Open Rotation (No Gobo) DMX = 112 Gobo 1 (Rotate) DMX = 126 Gobo 2 (Rotate) DMX = 140 Gobo 3 (Rotate) DMX = 154 Gobo 4 (Rotate) DMX = 168 Gobo 5 (Rotate) DMX = 182 Gobo 6 (Rotate) DMX = 196 Gobo 7 (Rotate) DMX = 210 Open DMX = 214 Spin Fast to Slow DMX = 217 - 234 Stop DMX = 235 - 237 Spin Slow to Fast DMX = 238 - 255
14 15	Rotating Gobo Index / Rotate	0 - 65535	0 - 100%	32768	16 bit control of the Rotating Gobo Wheel's index and rotation in either direction. Rotate Fast to Slow << = DMX 0 - 32755 Rotate STOP = DMX 32756 - 32780 Rotate Slow to Fast >> = DMX 32781 - 65535
16	Beam Iris	0 - 255	0 - 100%	0	Controls beam size iris from 0 (open) to 255 (small).
17	Strobe	0 - 255	0 - 100%	0	Controls strobe operations as follows: Open = DMX 0 - 2 Closed = DMX 3 - 5 Slow Rand = DMX 6 - 7 Med Rand = DMX 8 - 10 Fast Rand = DMX 11 - 12 Strobe Range = DMX 13 - 127 (fastest)
18	Frost	0 - 255	0 - 100%	0	Controls frost mechanism. Linear control from No Frost (0) to Full Frost (255).
19	Prism	0 - 255	0 - 100%	0	Controls prism mechanism. Prism Out = DMX 0 - 2 Prism In (Index) = DMX 3 - 127 Prism In (Rotate) = DMX 128 - 255

Table 10: VL440 Spot Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description
20	Prism Rotate - High	0 - 65535	0 - 100%	32768	16 bit control of prism index or rotation. Rotate Fast to Slow << = DMX 0 - 32755 Rotate STOP = DMX 32756 - 32780 Rotate Slow to Fast >> = DMX 32781 - 65535
21	Prism Rotate - Low				
22	*Not Used*	-	-	-	*For Future Use*
23	*Not Used*	-	-	-	*For Future Use*
24	*Not Used*	-	-	-	*For Future Use*
25	*Not Used*	-	-	-	*For Future Use*
26	Focus Time	0 - 255	0 - 100%	255	Allows for luminaire timing of pan and tilt. Profile should default to DMX 255 for smoothest console timing.
27	Color Time	0 - 255	0 - 100%	255	Allows for luminaire timing of color wheel functions. Profile should default to DMX 255 for smoothest console timing.
28	Beam Time	0 - 255	0 - 100%	255	Allows for luminaire timing of beam functions. Profile should default to DMX 255 for smoothest console timing.
29	Gobo Time	0 - 255	0 - 100%	255	Allows for luminaire timing of gobo wheel functions. Profile should default to DMX 255 for smoothest console timing.
30	Control	0 - 255	0 - 100%	0	Used to strike/douse the lamp, set lamp levels, and other various functions, as well as resetting the luminaire via the console. DMX values are: Default Console Value (Idle) = DMX 0 Display-**Menu Settings**/Off = DMX 3 - 4 Reset Fixture to **Defaults** = DMX 5 - 7 Fans Constant = DMX 11 - 13 **Fans Auto** = DMX 14 - 16 Full Luminaire Recal = DMX 81 - 87 ReCal Color = DMX 100 - 104 ReCal Gobo = DMX 112 - 116 ReCal Beam = DMX 126 - 130 ReCal Dim/Strobe = DMX 138 - 142 Lamp OFF = DMX 165 - 171 Lamp @ Stand-by (Quiet) = DMX 176 - 181 **Lamp @ Full** = DMX 199 - 204 Lamp Strike = DMX 249 - 255 When resetting fixtures to Defaults, settings in **Bold** will be activated.

Notes:

Default Values: *Denotes recommended console default settings.

Use of Timing Channels: The default value setting in the profile should be 255 (proportional control) to allow smooth movement when using console timing. The Timing channel data should change as a snap. A zero value will give the fastest move but without any smoothing, this can look steppy in console-timed moves.

To use a timing channel instead of console timing it is necessary to set the timing channel to the desired value and set cue and/or parameter time to zero. A combination of time controls can produce unexpected results. Refer to "Luminaire Timing" on page 48 for more information.

Timing Channel Control: The luminaire uses the timing channel value to calculate a smooth continuous movement for a given time and transition.

VL770 Spot Channel Mapping

These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence.

Table 11: VL770 Spot Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description
1	Intensity	0 (closed) - 255 (open)	0 - 100%	0	Linear Intensity control from 0 (closed) to 255 (open).
2	Pan Hi Byte	0 - 65535	0 - 100%	32768	16 bit control of Pan 540°of movement.
3	Pan Lo Byte				
4	Tilt Hi Byte	0 - 65535	0 - 100%	32768	16 bit control of Tilt 260° of movement.
5	Tilt Lo Byte				
6	Edge	0 - 255	0 - 100%	0	Controls Edge lens from 0 to 255.
7	Zoom	0 - 255	0 - 100%	0	Controls zoom assy. 0 (narrow) to 255 (wide).
8	Cyan	0 - 255	0 - 100%	0	Controls Cyan color wheel as follows: Open to Full Saturation = DMX 0 - 216
9	Yellow	0 - 255	0 - 100%	0	Controls Yellow color wheel as follows: Open to Full Saturation = DMX 0 - 216
10	Magenta	0 - 255	0 - 100%	0	Controls Magenta color wheel as follows: Open to Full Saturation = DMX 0 - 216
11	Color Wheel	0 - 255	0 - 100%	0	Controls Static Color Wheel. Linear control from 0 to 216. From 217 - 255 will spin the color wheel in either direction. **Bold** number indicates center values for each color. Open (No Color) = DMX **0** (0 - 14) Red = DMX **24** (15 - 34) Blue = DMX **47** (35 - 58) Kelly Green = DMX **72** 59 - 82 Magenta = DMX **95** (83 - 106) CTO = DMX **119** (107 - 130) Flesh Pink = DMX **143** (131 - 156) Dark Orange = DMX **168** (157 - 179) Congo Blue = DMX **191** (180 - 201) Open (No Color) = DMX 202 - 216 Spin Fast to Slow = DMX 217 - 234 Stop = DMX 235 - 237 Spin Slow to Fast = DMX 238 - 255
12	Fixed Gobo Wheel	0 - 255	0 - 100%	0	Controls Fixed Gobo Wheel. Linear control from Wheel 0 to 216. From 217 to 255 will give different speeds of wheel spin. **Bold** type below denotes center values.(note, half gobo positioning is not possible) Open (No Gobo) = DMX **0** (0 - 9) Gobo 1 = DMX **18** (10 - 27) Gobo 2 = DMX **36** (28 - 45) Gobo 3 = DMX **54** (46 - 63) Gobo 4 = DMX **72** (64 - 81) Gobo 5 = DMX **90** (82 - 99) Gobo 6 = DMX **108** (100 - 117) Gobo 7 = DMX **126** (118 - 135) Gobo 8 = DMX **144** (136 - 153) Gobo 9 = DMX **162** (154 - 171) Gobo 10 = DMX **180** (172 - 189) Open (No Gobo) = DMX **198** (190 - 216) Spin Fast to Slow = DMX 217 - 234 Stop = DMX 235 - 237 Spin Slow to Fast = DMX 238 - 255

Table 11: VL770 Spot Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description
13	Rotating Gobo Wheel	0 - 255	0 - 100%	0	Controls Rotating Gobo Wheel using the following (note, half gobo positioning is not possible): Open Index (No Gobo) DMX = 0 Gobo 1 (Index) DMX = 14 Gobo 2 (Index) DMX = 28 Gobo 3 (Index) DMX = 42 Gobo 4 (Index) DMX = 56 Gobo 5 (Index) DMX = 70 Gobo 6 (Index) DMX = 84 Gobo 7 (Index) DMX = 98 Open Rotation (No Gobo) DMX = 112 Gobo 1 (Rotate) DMX = 126 Gobo 2 (Rotate) DMX = 140 Gobo 3 (Rotate) DMX = 154 Gobo 4 (Rotate) DMX = 168 Gobo 5 (Rotate) DMX = 182 Gobo 6 (Rotate) DMX = 196 Gobo 7 (Rotate) DMX = 210 Open DMX = 214 Spin Fast to Slow DMX = 217 - 234 Stop DMX = 235 - 237 Spin Slow to Fast DMX = 238 - 255
14	Rotating Gobo Index / Rotate	0 - 65535	0 - 100%	32768	16 bit control of the Rotating Gobo Wheel's index and rotation in either direction. Rotate Fast to Slow << = DMX 0 - 32755 Rotate STOP = DMX 32756 - 32780 Rotate Slow to Fast >> = DMX 32781 - 65535
15					
16	Beam Iris	0 - 255	0 - 100%	0	Controls beam size iris from 0 (open) to 255 (small).
17	Strobe	0 - 255	0 - 100%	0	Controls strobe operations as follows: Open = DMX 0 - 2 Closed = DMX 3 - 5 Slow Rand = DMX 6 - 7 Med Rand = DMX 8 - 10 Fast Rand = DMX 11 - 12 Strobe Range = DMX 13 - 127 (fastest)
18	Frost	0 - 255	0 - 100%	0	Controls frost mechanism. Linear control from No Frost (0) to Full Frost (255).
19	Prism	0 - 255	0 - 100%	0	Controls prism mechanism. Prism Out = DMX 0 - 2 Prism In (Index) = DMX 3 - 127 Prism In (Rotate) = DMX 128 - 255
20	Prism Rotate - High	0 - 65535	0 - 100%	32768	16 bit control of prism index or rotation. Rotate Fast to Slow << = DMX 0 - 32755 Rotate STOP = DMX 32756 - 32780 Rotate Slow to Fast >> = DMX 32781 - 65535
21	Prism Rotate - Low				
22	*Not Used*	-	-	-	*For Future Use*
23	*Not Used*	-	-	-	*For Future Use*
24	*Not Used*	-	-	-	*For Future Use*
25	*Not Used*	-	-	-	*For Future Use*
26	Focus Time	0 - 255	0 - 100%	255	Allows for luminaire timing of pan and tilt. Profile should default to DMX 255 for smoothest console timing.
27	Color Time	0 - 255	0 - 100%	255	Allows for luminaire timing of color wheel functions. Profile should default to DMX 255 for smoothest console timing.
28	Beam Time	0 - 255	0 - 100%	255	Allows for luminaire timing of beam functions. Profile should default to DMX 255 for smoothest console timing.

Table 11: VL770 Spot Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description
29	Gobo Time	0 - 255	0 - 100%	255	Allows for luminaire timing of gobo wheel functions. Profile should default to DMX 255 for smoothest console timing.
30	Control	0 - 255	0 - 100%	0	Used to strike/douse the lamp, set lamp levels, and other various functions, as well as resetting the luminaire via the console. DMX values are: Default Console Value (Idle) = DMX 0 Display-**Menu Settings**/Off = DMX 3 - 4 Reset Fixture to **Defaults** = DMX 5 - 7 Fans Constant = DMX 11 - 13 **Fans Auto** = DMX 14 - 16 Full Luminaire Recal = DMX 81 - 87 ReCal Color = DMX 100 - 104 ReCal Gobo = DMX 112 - 116 ReCal Beam = DMX 126 - 130 ReCal Dim/Strobe = DMX 138 - 142 Lamp OFF = DMX 165 - 171 Lamp @ Stand-by (Quiet) = DMX 176 - 181 **Lamp @ Full** = DMX 199 - 204 Lamp Strike = DMX 249 - 255 When resetting fixtures to Defaults, settings in **Bold** will be activated.

Notes:

Default Values: *Denotes recommended console default settings.

Use of Timing Channels: The default value setting in the profile should be 255 (proportional control) to allow smooth movement when using console timing. The Timing channel data should change as a snap. A zero value will give the fastest move but without any smoothing, this can look steppy in console-timed moves.

To use a timing channel instead of console timing it is necessary to set the timing channel to the desired value and set cue and/or parameter time to zero. A combination of time controls can produce unexpected results. Refer to "Luminaire Timing" on page 48 for more information.

Timing Channel Control: The luminaire uses the timing channel value to calculate a smooth continuous movement for a given time and transition.

VL880 Spot Channel Mapping

These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence.

Table 12: VL880 Spot Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description
1	Intensity	0 (closed) - 255 (open)	0 - 100%	0	Linear Intensity control from 0 (closed) to 255 (open).
2	Pan Hi Byte	0 - 65535	0 - 100%	32768	16 bit control of Pan 540°of movement.
3	Pan Lo Byte				
4	Tilt Hi Byte	0 - 65535	0 - 100%	32768	16 bit control of Tilt 260° of movement.
5	Tilt Lo Byte				
6	Edge	0 - 255	0 - 100%	0	Controls Edge lens from 0 to 255.
7	Zoom	0 - 255	0 - 100%	0	Controls zoom assy. 0 (narrow) to 255 (wide).
8	Cyan	0 - 255	0 - 100%	0	Controls Cyan color wheel as follows: Open to Full Saturation = DMX 0 - 216
9	Yellow	0 - 255	0 - 100%	0	Controls Yellow color wheel as follows: Open to Full Saturation = DMX 0 - 216
10	Magenta	0 - 255	0 - 100%	0	Controls Magenta color wheel as follows: Open to Full Saturation = DMX 0 - 216
11	Color Wheel	0 - 255	0 - 100%	0	Controls Static Color Wheel. Linear control from 0 to 216. From 217 - 255 will spin the color wheel in either direction. **Bold** number indicates center values for each color. Open (No Color) = DMX **0** (0 - 14) Red = DMX **24** (15 - 34) Blue = DMX **47** (35 - 58) Kelly Green = DMX **72** 59 - 82 Magenta = DMX **95** (83 - 106) CTO = DMX **119** (107 - 130) Flesh Pink = DMX **143** (131 - 156) Dark Orange = DMX **168** (157 - 179) Congo Blue = DMX **191** (180 - 201) Open (No Color) = DMX 202 - 216 Spin Fast to Slow = DMX 217 - 234 Stop = DMX 235 - 237 Spin Slow to Fast = DMX 238 - 255
12	Fixed Gobo Wheel	0 - 255	0 - 100%	0	Controls Fixed Gobo Wheel. Linear control from Wheel 0 to 216. From 217 to 255 will give different speeds of wheel spin. **Bold** type below denotes center values.(note, half gobo positioning is not possible) Open (No Gobo) = DMX **0** (0 - 9) Gobo 1 = DMX **18** (10 - 27) Gobo 2 = DMX **36** (28 - 45) Gobo 3 = DMX **54** (46 - 63) Gobo 4 = DMX **72** (64 - 81) Gobo 5 = DMX **90** (82 - 99) Gobo 6 = DMX **108** (100 - 117) Gobo 7 = DMX **126** (118 - 135) Gobo 8 = DMX **144** (136 - 153) Gobo 9 = DMX **162** (154 - 171) Gobo 10 = DMX **180** (172 - 189) Open (No Gobo) = DMX **198** (190 - 216) Spin Fast to Slow = DMX 217 - 234 Stop = DMX 235 - 237 Spin Slow to Fast = DMX 238 - 255

Table 12: VL880 Spot Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description
13	Rotating Gobo Wheel	0 - 255	0 - 100%	0	Controls Rotating Gobo Wheel using the following (note, half gobo positioning is not possible): Open Index (No Gobo) DMX = 0 Gobo 1 (Index) DMX = 14 Gobo 2 (Index) DMX = 28 Gobo 3 (Index) DMX = 42 Gobo 4 (Index) DMX = 56 Gobo 5 (Index) DMX = 70 Gobo 6 (Index) DMX = 84 Gobo 7 (Index) DMX = 98 Open Rotation (No Gobo) DMX = 112 Gobo 1 (Rotate) DMX = 126 Gobo 2 (Rotate) DMX = 140 Gobo 3 (Rotate) DMX = 154 Gobo 4 (Rotate) DMX = 168 Gobo 5 (Rotate) DMX = 182 Gobo 6 (Rotate) DMX = 196 Gobo 7 (Rotate) DMX = 210 Open DMX = 214 Spin Fast to Slow DMX = 217 - 234 Stop DMX = 235 - 237 Spin Slow to Fast DMX = 238 - 255
14	Rotating Gobo Index / Rotate	0 - 65535	0 - 100%	32768	16 bit control of the Rotating Gobo Wheel's index and rotation in either direction. Rotate Fast to Slow << = DMX 0 - 32755 Rotate STOP = DMX 32756 - 32780 Rotate Slow to Fast >> = DMX 32781 - 65535
15					
16	Beam Iris	0 - 255	0 - 100%	0	Controls beam size iris from 0 (open) to 255 (small).
17	Strobe	0 - 255	0 - 100%	0	Controls strobe operations as follows: Open = DMX 0 - 2 Closed = DMX 3 - 5 Slow Rand = DMX 6 - 7 Med Rand = DMX 8 - 10 Fast Rand = DMX 11 - 12 Strobe Range = DMX 13 - 127 (fastest)
18	Frost	0 - 255	0 - 100%	0	Controls frost mechanism. Linear control from No Frost (0) to Full Frost (255).
19	Prism	0 - 255	0 - 100%	0	Controls prism mechanism. Prism Out = DMX 0 - 2 Prism In (Index) = DMX 3 - 127 Prism In (Rotate) = DMX 128 - 255
20	Prism Rotate - High	0 - 65535	0 - 100%	32768	16 bit control of prism index or rotation. Rotate Fast to Slow << = DMX 0 - 32755 Rotate STOP = DMX 32756 - 32780 Rotate Slow to Fast >> = DMX 32781 - 65535
21	Prism Rotate - Low				
22	*Not Used*	-	-	-	*For Future Use*
23	*Not Used*	-	-	-	*For Future Use*
24	*Not Used*	-	-	-	*For Future Use*
25	*Not Used*	-	-	-	*For Future Use*
26	Focus Time	0 - 255	0 - 100%	255	Allows for luminaire timing of pan and tilt. Profile should default to DMX 255 for smoothest console timing.
27	Color Time	0 - 255	0 - 100%	255	Allows for luminaire timing of color wheel functions. Profile should default to DMX 255 for smoothest console timing.
28	Beam Time	0 - 255	0 - 100%	255	Allows for luminaire timing of beam functions. Profile should default to DMX 255 for smoothest console timing.

Table 12: VL880 Spot Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description
29	Gobo Time	0 - 255	0 - 100%	255	Allows for luminaire timing of gobo wheel functions. Profile should default to DMX 255 for smoothest console timing.
30	Control	0 - 255	0 - 100%	0	Used to strike/douse the lamp, set lamp levels, and other various functions, as well as resetting the luminaire via the console. DMX values are: Default Console Value (Idle) = DMX 0 Display-**Menu Settings**/Off = DMX 3 - 4 Reset Fixture to **Defaults** = DMX 5 - 7 Fans Constant = DMX 11 - 13 **Fans Auto** = DMX 14 - 16 Full Luminaire Recal = DMX 81 - 87 ReCal Color = DMX 100 - 104 ReCal Gobo = DMX 112 - 116 ReCal Beam = DMX 126 - 130 ReCal Dim/Strobe = DMX 138 - 142 Lamp OFF = DMX 165 - 171 Lamp @ Stand-by (Quiet) = DMX 176 - 181 **Lamp @ Full** = DMX 199 - 204 Lamp Strike = DMX 249 - 255 When resetting fixtures to Defaults, settings in **Bold** will be activated.

Notes:

Default Values: *Denotes recommended console default settings.

Use of Timing Channels: The default value setting in the profile should be 255 (proportional control) to allow smooth movement when using console timing. The Timing channel data should change as a snap. A zero value will give the fastest move but without any smoothing, this can look steppy in console-timed moves.

To use a timing channel instead of console timing it is necessary to set the timing channel to the desired value and set cue and/or parameter time to zero. A combination of time controls can produce unexpected results. Refer to "Luminaire Timing" on page 48 for more information.

Timing Channel Control: The luminaire uses the timing channel value to calculate a smooth continuous movement for a given time and transition.

Luminaire Timing

Luminaire Timing Channel Information

Timing channel control improves the timed moves of certain groups of parameters. Four timing channels are provided, one for Pan and Tilt, one for color parameters, one for beam parameters and one for gobo/index parameters. Timing channels support time values of up to six minutes.

Table 13: Channel Function / Timing Channel Relationship

Channel Function	Timing Channel			
	Focus Time	Color Time	Beam Time	Gobo Time
Pan (Hi Byte/Lo Byte)	♦			
Tilt (Hi Byte/Lo Byte)	♦			
Color		♦		
Index				♦
Iris			♦	
Edge			♦	
Zoom			♦	
Fixed Gobo				♦
Rotating Gobo				♦

Timing Channel Notes:

- It is recommended that all timing channels are defaulted to a DMX value of 255 (100%). Applying this value will initiate a smoothing algorithm while using a console fade time.
- To achieve best (smoothest) timing possible, utilize the luminaire timing channels. A luminaire timing of DMX 0 (0%) will give the fastest response to the affected attribute. For example, this may be desired in fast color and/or gobo changes.
- A timing value of zero is full speed. A time value of 100% (or 255 in DMX) causes the associated parameter(s) to follow cue fade time (console time) rather than the timing channel.

Note: The particular storing syntax for your console, as well as instructions on how to write part cues, can be found in the operation manual for that console.

To use these channels, you must:

Step 1. Create the cue, including color, beam, gobo and position as required.

Step 2. Decide which fixtures and which parameter groups will use timing channels.

Step 3. Assign a value to the particular timing channel(s) you wish to use (for timing information see chart on next page).

Step 4. Set console timing (or cue fade time) for parameters and timing channels to zero seconds.

Step 5. Store cue.

Note: Avoid changing timing channel values in a fading cue. This can cause unexpected behavior in the luminaire as the timing channel value is updated over time. Timing channel values and the final destination of the parameters affected by the timing channel should always be sent in a zero count.

Timing channels can be set in either % or 0-255 (DMX) modes, with the following values assigned:

Table 14: Timing Channels Map

DMX	% Value	= Seconds
0		Full Speed
1		0.2
2		0.4
3	1	0.6
4		0.8
5	2	1
6		1.2
7		1.4
8	3	1.6
9		1.8
10	4	2
11		2.2
12		2.4
13	5	2.6
14		2.8
15	6	3
16		3.2
17		3.4
18	7	3.6
19		3.8
20	8	4
21		4.2
22		4.4
23	9	4.6
24		4.8
25	10	5
26		5.2
27		5.4
28	11	5.6
29		5.8
30		6
31	12	6.2
32		6.4
33	13	6.6
34		6.8

Table 14: Timing Channels Map (Continued)

DMX	% Value	= Seconds
35		7.0
36	14	7.2
37		7.4
38	15	7.6
39		7.8
40		8
41	16	8.2
42		8.4
43	17	8.6
44		8.8
45		9
46	18	9.2
47		9.4
48	19	9.6
49		9.8
50		10
51	20	10.2
52		10.4
53		10.6
54	21	11
55		11
56	22	12
57		12
58		13
59	23	13
60		14
61	24	14
62		14
63		15
64	25	15
65		16
66	26	16
67		16
68		17
69	27	17
70		18
71	28	18
72		18
73		19
74	29	19
75		20
76	30	20

Table 14: Timing Channels Map (Continued)

DMX	% Value	= Seconds
77		20
78		21
79	31	21
80		21
81		22
82	32	22
83		23
84	33	23
85		23
86		24
87	34	24
88		25
89	35	25
90		25
91		26
92	36	26
93		27
94	37	27
95		27
96		28
97	38	28
98		29
99	39	29
100		29
101		30
102	40	30
103		30
104		31
105	41	31
106		32
107	42	32
108		32
109		33
110	43	33
111		34
112	44	34
113		34
114		35
115	45	35
116		36
117	46	36
118		36

Table 14: Timing Channels Map (Continued)

DMX	% Value	= Seconds
119		37
120	47	37
121		38
122	48	38
123		38
124		39
125	49	39
126		39
127		40
128	50	40
129		41
130	51	41
131		41
132		42
133	52	42
134		43
135	53	43
136		43
137		44
138	54	44
139		45
140	55	45
141		45
142		46
143	56	46
144		47
145	57	47
146		47
147		48
148	58	48
149		49
150	59	49
151		49
152		50
153	60	50
154		50
155		51
156	61	51
157		52
158	62	52
159		52
160		53

Table 14: Timing Channels Map (Continued)

DMX	% Value	= Seconds
161	63	53
162		54
163	64	54
164		54
165		55
166	65	55
167		56
168	66	56
169		56
170		57
171	67	57
172		58
173	68	58
174		58
175		59
176	69	59
177		59
178		60
179	70	60
180		65
181	71	65
182		65
183		70
184	72	70
185		75
186	73	75
187		75
188		80
189	74	80
190		85
191	75	85
192		85
193		90
194	76	90
195		95
196	77	95
197		95
198		100
199	78	100
200		110
201	79	110
202		110

Table 14: Timing Channels Map (Continued)

DMX	% Value	= Seconds
203		120
204	80	120
205		120
206	81	130
207		130
208		140
209	82	140
210		140
211		150
212	83	150
213		160
214	84	160
215		160
216		170
217	85	170
218		180
219	86	180
220		180
221		190
222	87	190
223		200
224	88	200
225		200
226		210
227	89	210
228		210
229		220
230	90	220
231		230
232	91	230
233		230
234		240
235	92	240
236		250
237	93	250
238		250
239		260
240	94	260
241		270
242	95	270
243		270
244		280

Table 14: Timing Channels Map (Continued)

DMX	% Value	= Seconds
245	96	280
246		290
247	97	290
248		290
249		300
250	98	300
251		310
252	99	310
253		310
254		310
255	100	Follows Cue Data

Control Channel Functions

The following control actions must be accomplished with zero time transition or with timing disabled. Discrete values must be used and not manual controls such as faders or encoders.

To use control channel functions:

Step 1. Select an action to be sent.

Step 2. Set control channel value for desired action (for example, 84 for reset). Hold value for 3 seconds.

Note: A numerical keypad is required for sending values. An encoder or fader does not allow for a "snap" value change, which is required to affect the control functions.

Step 3. Set control channel value to zero. (This must occur without any scaling values. Action will be voided if other values are detected between action value and zero.)

The following pages contain the control channel function maps for the VL440 spot, VL770 spot, and VL880 spot luminaires. Refer to the corresponding control channel functions table for your fixture.

Control channel information is segregated into four sections:

- "VL440 Spot Control Channel Functions" on page 56
- "VL770 Spot Control Channel Functions" on page 57
- "VL880 Spot Control Channel Functions" on page 58

VL440 Spot Control Channel Functions

Table 15: VL440 Spot Control Channel Functions

Control Channel Function	Control Channel Value (VL440 Spot Only)		
	% Value	DMX Value	After 3 Secs
Default Console Value (Idle)		0	0
Display - **Menu Settings** / Off		3 - 4	0
Reset Fixture to **Defaults**		5 - 7	0
Fans Constant		11 - 13	0
Fans Auto		14 - 16	0
Full Luminaire Recal		81 - 87	0
Recal Color		100 - 104	0
Recal Gobo		112 - 116	0
Recal Beam		126 - 130	0
Recal Dim / Strobe		138 - 142	0
Lamp OFF		165 171	0
Lamp @ Stand-By (Quiet)		176 - 181	0
Lamp @ Full		199 - 204	0
Lamp Strike		249 - 255	0

Notes:
When resetting fixtures to Defaults, settings in **Bold** will be activated.
DMX values not shown are for future use.

VL770 Spot Control Channel Functions

Table 16: VL770 Spot Control Channel Functions

Control Channel Function	Control Channel Value (VL770 Spot Only)		
	% Value	DMX Value	After 3 Secs
Default Console Value (Idle)		0	0
Display - **Menu Settings** / Off		3 - 4	0
Reset Fixture to **Defaults**		5 - 7	0
Fans Constant		11 - 13	0
Fans Auto		14 - 16	0
Full Luminaire Recal		81 - 87	0
Recal Color		100 - 104	0
Recal Gobo		112 - 116	0
Recal Beam		126 - 130	0
Recal Dim / Strobe		138 - 142	0
Lamp OFF		165 171	0
Lamp @ Stand-By (Quiet)		176 - 181	0
Lamp @ Full		199 - 204	0
Lamp Strike		249 - 255	0

Notes:
When resetting fixtures to Defaults, settings in **Bold** will be activated.
DMX values not shown are for future use.

VL880 Spot Control Channel Functions

Table 17: VL880 Spot Control Channel Functions

Control Channel Function	Control Channel Value (VL770 Spot Only)		
	% Value	DMX Value	After 3 Secs
Default Console Value (Idle)		0	0
Display - **Menu Settings** / Off		3 - 4	0
Reset Fixture to **Defaults**		5 - 7	0
Fans Constant		11 - 13	0
Fans Auto		14 - 16	0
Full Luminaire Recal		81 - 87	0
Recal Color		100 - 104	0
Recal Gobo		112 - 116	0
Recal Beam		126 - 130	0
Recal Dim / Strobe		138 - 142	0
Lamp OFF		165 171	0
Lamp @ Stand-By (Quiet)		176 - 181	0
Lamp @ Full		199 - 204	0
Lamp Strike		249 - 255	0

Notes:
When resetting fixtures to Defaults, settings in **Bold** will be activated.
DMX values not shown are for future use.

Updating Software

USB Download and Programming

To download files with a PC equipped with a Universal Serial Bus (USB) port, you need the VARI✳LITE USB Luminaire Programming Kit (28.8500.0054). The USB Luminaire Programming Kit can be ordered directly from your Authorized VARI✳LITE Dealer.

The VARI✳LITE USB Luminaire Programming Kit (28.8500.0054) includes:

- VARI✳LITE USB Upload Cable (25.9600.0001)
- USB Luminaire Programming Kit CD (87.8500.0002)
- Instruction Sheet (02.8500.0100)
- VARI✳LITE carry bag (07.5044.0005)

Computer Requirements for the USB Luminaire Programming Kit

- PC running Windows 98, 2000, XP, or Vista. Although the USB Luminaire Programming kit software is not directly compatible with Apple Macintosh® computers, it does run with some Windows emulators.
- In addition to Windows, your computer must be running IE 5.01 or later, and Microsoft.NET Framework Version 3.5 (or later), which you can download from http://www.microsoft.com and search for .NET Framework downloads.
- An available USB 2.0 port on the PC.
- For Windows Vista (64-Bit) and Windows 7 (64-Bit) operating systems, refer to the Vari-Lite Technical Notice TN-309 (in the product downloads section) on the Vari-Lite web site.

USB VLDownloader PC Program and .bin Luminaire Files

The USB VLDownloader program and current .bin files are available from the Product Downloads page at www.vari-lite.com. Instructions for installing the USB VLDownloader program on your PC are also available on the Product Downloads page. Use the USB VLDownloader program to transfer updated versions of the luminaire operating software (.bin files) from your PC to the luminaires.

Note: Refer to instruction sheet 02.8500.0100 for detailed programming instructions for VARI✳LITE luminaires.

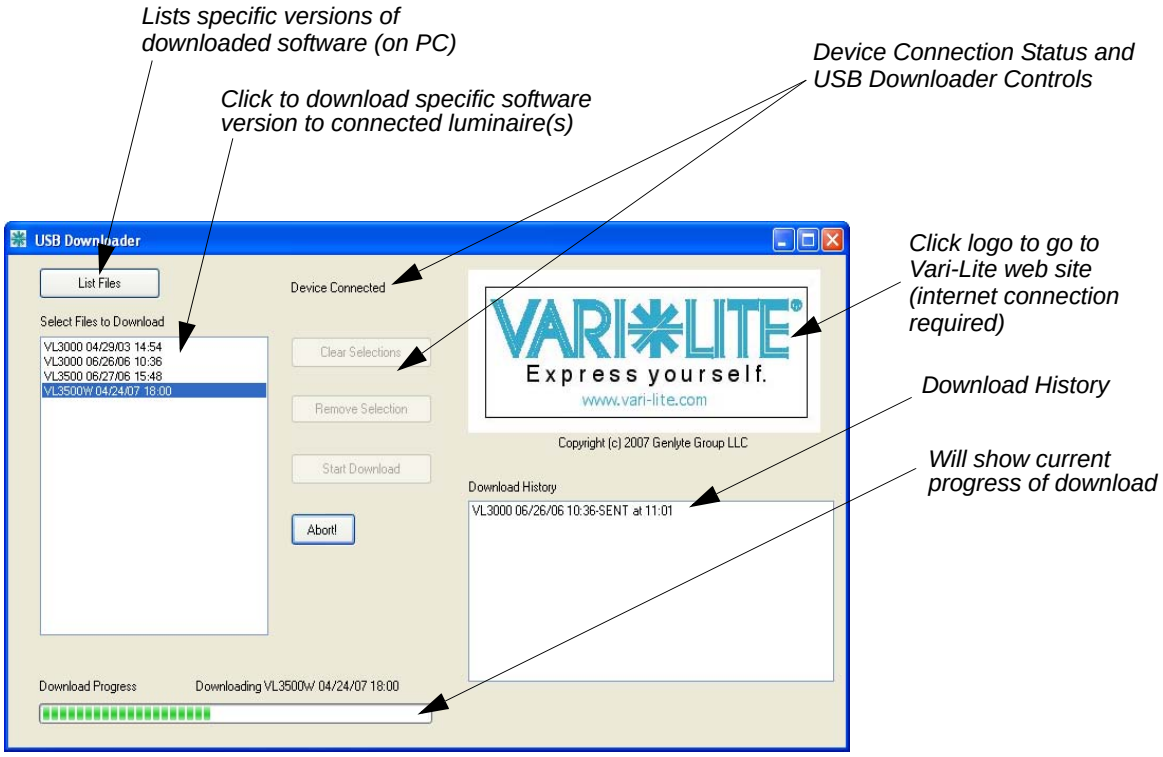


Figure 3-1: VL Download Program Window

Transferring Software From Luminaire to Luminaire

It is possible to transfer specific software versions between luminaires. As in the case of installing new software versions, multiple luminaires can be programmed at the same time if they are data linked together (refer to "Connecting Data and Power" on page 25), however a maximum of 32 luminaires can be updated at once.

Hardware Requirements

Data cables used in this process must have two twisted pairs and a shield. It is also recommended that cables meet all other USITT DMX specification requirements. Refer to "Data Cables" on page 16.

A DMX termination connector is used in this process. Refer to page 17 for more information regarding the construction of this connector.

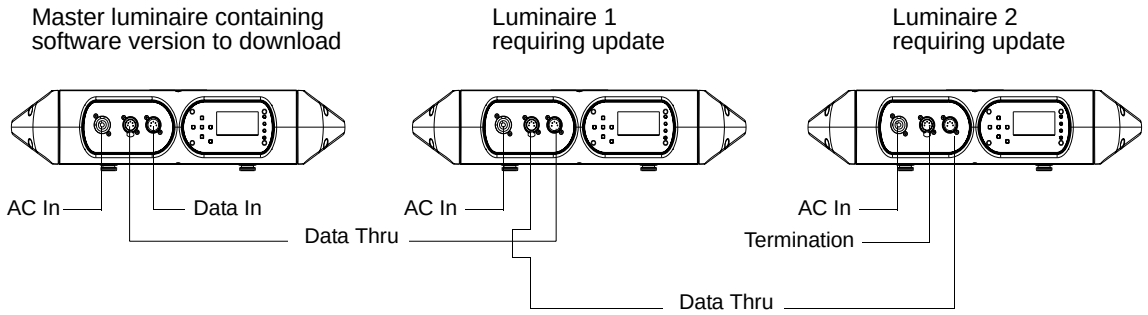


Figure 3-2: Software Transfer Setup

Transfer Procedure

This procedure is used to transfer software versions between luminaires.

Step 1. At last luminaire, install DMX termination connector into DATA THRU XLR connector.

Step 2. At master luminaire (first in chain) Menu Display, press [Menu].

Step 3. Press [Up] / [Down] arrows until Fixture appears.

Step 4. Press [Up] / [Down] arrows until Download appears. Press [Enter].

Step 5. OK? will be displayed. Press [Enter] to accept.

Step 6. Download will proceed. (Download will take 4-5 seconds.) The number of blocks displayed will be less in a luminaire-to-luminaire download than in a PC-to-luminaire download for the same software version.

Step 7. Once download is complete, luminaire will automatically recalibrate. Once recalibration is complete, reset (recalibrate again) luminaire.

Verify software version at luminaire:

Step 1. At Menu Display, press [Menu].

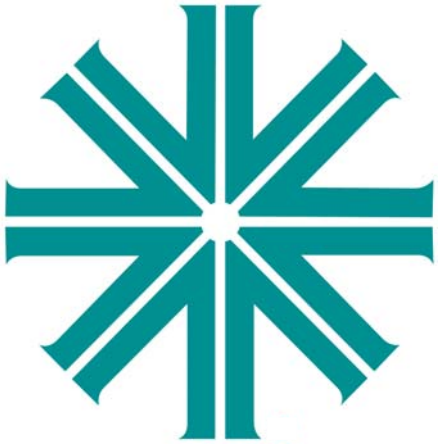
Step 2. Press [Up] / [Down] arrows until Fixture appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows until Version appears. Press [Enter].

The first half of the version will be displayed as a date (MM/DD/YY). For example, 03/18/03 (March 18, 2003).

Press [Enter] to display second half of version. This will be displayed as a time (HH:MM). For example, 16.36 = 4:36 pm)

Notes



CHAPTER 4.

Menu System

This chapter contains instructions for operating the luminaire using the Menu Display feature.

- **Menu Operation**
- **Self Tests**

Menu Operation

What Is the Menu System?

The menu system is a programmable set of commands used to configure, address, operate, and test the luminaire. The menu system is controlled at the Menu Display available at the enclosure input panel.

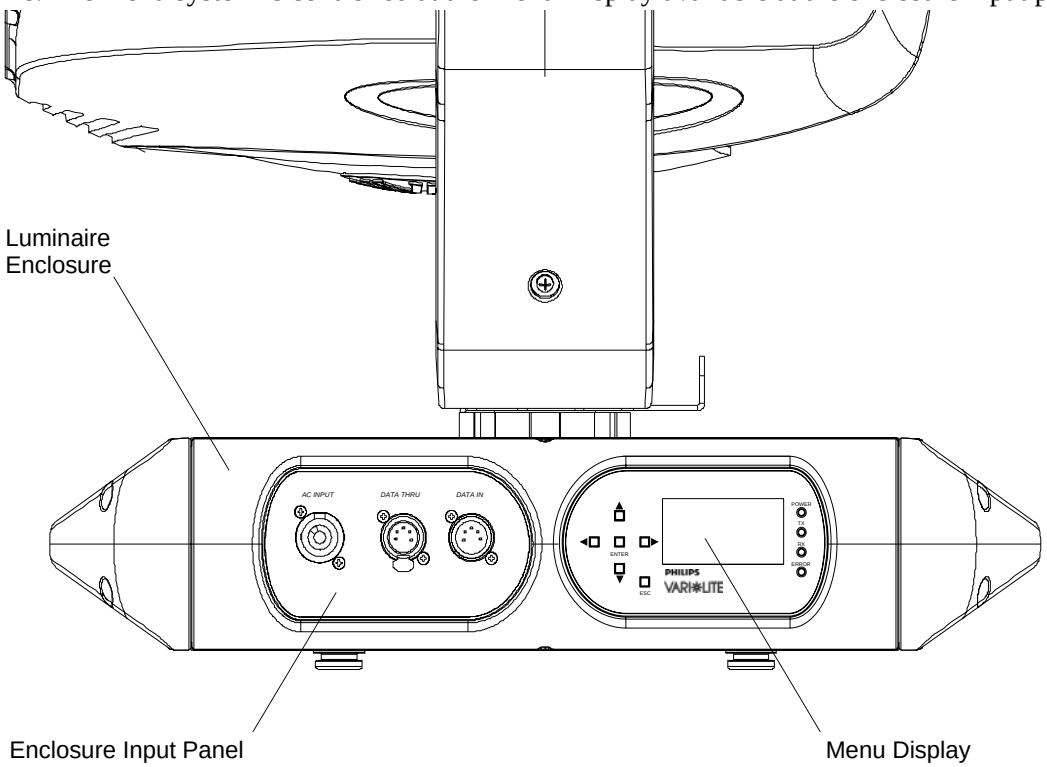


Figure 4-1: Menu Display Location

Controls Operation

The menu system is controlled by an ENTER, ESC (Escape), and four Arrow (◁△▽▷) buttons. These buttons function are shown in Figure 4-2.

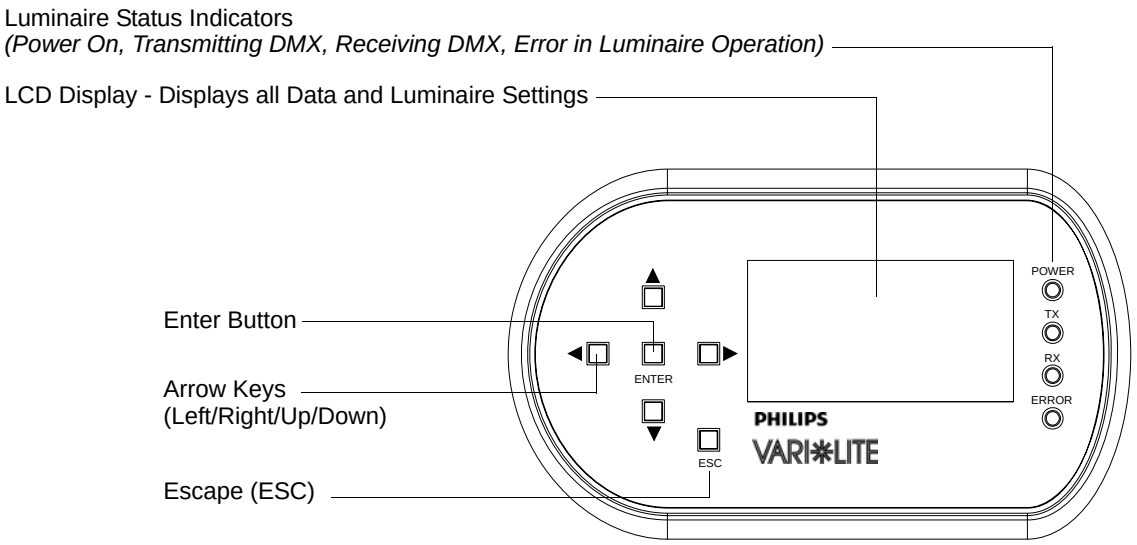


Figure 4-2: VL400 / VL440 / VL770 Spot Luminaire Menu Control

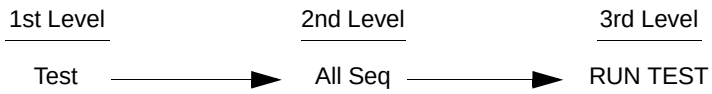
Table 1: Menu Control Buttons

Button	Description	Action
△ □	Up Arrow	Menu Navigation / Data Selection
□ ▽	Down Arrow	Menu Navigation / Data Selection
□ ▷	Right Arrow	Menu Navigation / Data Selection
◁ □	Left Arrow	Menu Navigation / Data Selection
□ ENTER	Enter Button	To Select or Change a Setting or Data Value
□ ESC	Escape Button	Used to Access Main Menu Parameters, Exit, or Return to Previous Menu Item

Using the Menu System

To enter the menu system, first press [ESC]. The functions displayed will be 1st level functions. Scroll through the 1st level functions by pressing [Up] / [Down] arrows. Once the desired function appears in the display, press [Enter]. You are now at the 2nd level. Once again, press the [Up] / [Down] arrows to scroll through 2nd level functions. Press [Enter] to access 3rd level functions and so forth. When the highest level for the function is reached, [Up] / [Down] arrows can be pressed to enter a value or select a toggle activation such as On/Off. Press [Enter] to store the value or select an action.

For example:



Default State

The menu display's default state during normal operation is to display the DMX address. After 10 seconds of inactivity at the display, it will change to the default state.

After longer periods of inactivity, the menu display will switch to its off state. The default state for this feature is 5 minutes, however, different time lengths can also be programmed.

To program a different time length for menu off feature:

Step 1. Press [ESC].

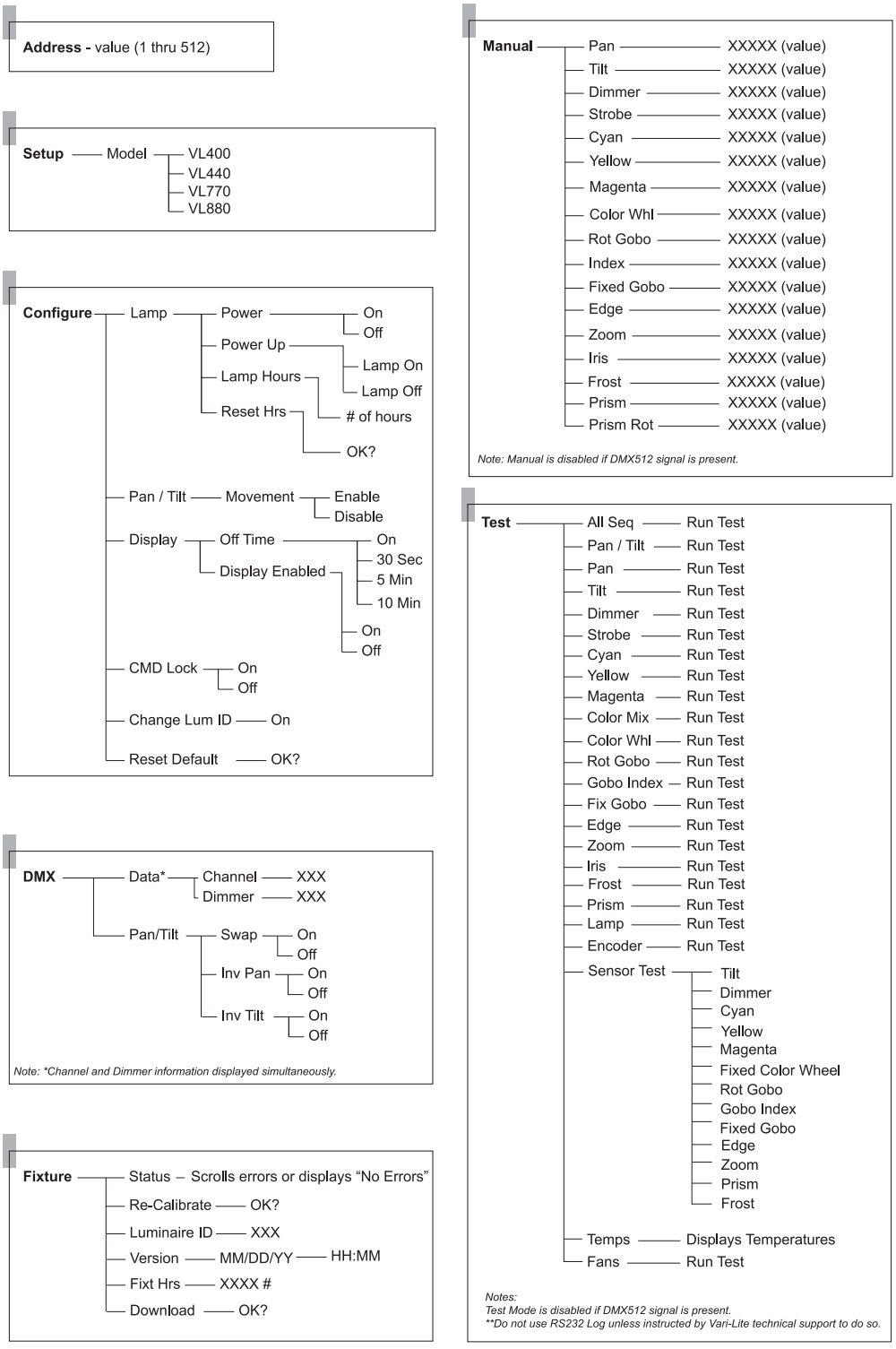
Step 2. Press [Up] / [Down] arrows until Config (Configuration) appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows to access Display. Press [Enter].

Step 4. Press [Up] / [Down] arrows to select either 30 Sec (30 seconds), 5 Min (5 minutes), 10 Min (10 minutes), or ON (on indefinitely). Press [Enter] to set.

Menu System Overview

The following is a graphic representation of the entire menu system.



Menu System Functions

Table 4-1: Menu System Chart

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Address *DMX Address*	**XXX** *DMX Address value*			
SetUp *Select Luminaire Type*	**Model**	**VL400**		
		VL440		
		VL770		
		VL880		
Config *System Configuration*	**Lamp** *Lamp Options*	**Power** *Lamp Power*	**ON** (default)	
			OFF	
		Power Up *Lamp Power-up State*	**Lamp ON** *Lamp On* (default)	
			Lamp OFF *Lamp Off*	
		Lamp Hours *Lamp Hours Used*	**XXXX** *Cumulative # of Operation Hours* (Not editable)	
		Reset Hrs *Reset Lamp Hour Counter*	**OK?**	
	Pan/Tilt *Pan and Tilt Options*	**Movement** *Position Recovery*	**Enable**	
			Disable	
	Display *Display Illumination*	**Off Time**	**ON** *ON indefinitely*	
			30sec *OFF in 30 seconds*	
			5Min *OFF in 5 minutes* (default)	
			10Min *OFF in 10 minutes*	
		Display Enabled	**On**	
			Off	
	CMD Lock *Command Lock*	**On**		
		Off		
	ChgLumID *Change Lum ID*	### *Set Luminaire ID Number*		
	Reset Default *Reset luminaire to default settings?*	**OK?**		

- Continued Next Page -

Table 4-1: Menu System Chart (Continued)

1st Level	2nd Level	3rd Level	4th Level	5thLevel
DMX *DMX Data and Pan/Tilt Mode*	**DATA** *Note: Channel and Dimmer information displayed simultaneously*	**Channel XXX** *DMX Channel*	**XXX** *Data*	
		Dimmer	**XXX** *Data*	
	Pan/Tilt *Pan/Tilt Options*	**Swap** *Swap Pan & Tilt*	**ON**	
			OFF (default)	
		Inv Pan *Invert Pan*	**ON**	
			OFF (default)	
		Inv Tilt *Invert Tilt*	**ON**	
			OFF (default)	
Fixture *Displays fixture information, condition or downloads new software*	**Status** *Status/Error Display*	*Scrolls error messages or displays* "**No Errors**"		
	Re-Cal *Recalibrate*	**OK?**		
	LumId *Luminaire ID*	**XXXX** *Luminaire ID Number*		
	Version *Software Version*	**XX/XX/XX** *Version Date*		
	Fixt Hrs *Fixture Hours On (powered)*	**XXXX** *Hours*		
	Download *Download Program to Luminaires*	**OK?**		

- Continued Next Page -

Table 4-1: Menu System Chart (Continued)

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Manual *Manual Commands Note: Manual is Disabled if DMX512 signal is present.*	**Pan** *Pan Motor*	**XXXXX** *Data*		
	Tilt *Tilt Motor*	**XXXXX** *Data*		
	Dimmer *Dimmer Wheel*	**XXXXX** *Data*		
	Strobe *Strobe*	**XXXXX** *Data*		
	Cyan *Cyan Color Wheel*	**XXXXX** *Data*		
	Yellow *Yellow Color Wheel*	**XXXXX** *Data*		
	Magenta *Magenta Color Wheel*	**XXXXX** *Data*		
	Color Whl *Fixed Color Wheel*	**XXXXX** *Data*		
	Rot Gobo *Rotating Gobo Select*	**XXXXX** *Data*		
	Index *Rotating Gobo Index*	**XXXXX** *Data*		
	Fixed Gobo *Select Fixed Gobo*	**XXXXX** *Data*		
	Edge *Edge*	**XXXXX** *Data*		
	Zoom *Zoom*	**XXXXX** *Data*		
	Iris *Beam Iris*	**XXXXX** *Data*		
	Frost *Frost*	**XXXXX** *Data*		
	Prism *Prism*	**XXXXX** *Data*		
	Prism Rot *Prism Rotation*	**XXXXX** *Data*		
Test *System Test*	**ALL SEQ** *Sequence Through All Tests*	**RunTest**	Press [Menu] to stop tests	
	Pan/Tilt *Pan/Tilt*	**RunTest**		
	Pan *Pan*	**RunTest**		
	Tilt *Tilt*	**RunTest**		
	Dimmer *Dimmer*	**RunTest**		
	Strobe *Strobe*	**RunTest**		

Table 4-1: Menu System Chart (Continued)

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Test *System Test* ***(continued)***	**Cyan** *Cyan Color Wheel*	**RunTest**	Press [Menu] to stop tests	
	Yellow *Yellow Color Wheel*	**RunTest**		
	Magenta *Magenta Color Wheel*	**RunTest**		
	Color Mix *Color Wheel Color Mixing*	**RunTest**		
	Color Whl *Fixed Color Wheel*	**RunTest**		
	Rot Gobo *Rotating Gobo Wheel*	**RunTest**		
	Gobo Index *Rotating Gobos Indexes*	**RunTest**		
	Fix Gobo *Fixed Gobo Wheel*	**RunTest**		
	Edge *Edge*	**RunTest**		
	Zoom *Zoom*	**RunTest**		
	Iris *Beam Iris*	**RunTest**		
	Frost *Frost*	**RunTest**		
	Prism *Prism*	**RunTest**		
	Lamp *Lamp (Disables Pan and Tilt for lamp adjustment)*	**RunTest**		
	Encoder *Encoder (Allows hand movement to check values)*	**Pan**	**Value**	
		Tilt	**Value**	

Table 4-1: Menu System Chart (Continued)

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Test *System Test* ***(continued)***	**Sensor** *Sensors Test*	**Tilt** *EOT Sensor*	**Sens Tst** *Sensor Test in Progress*	**PASS**
				FAIL
		Dimmer *Position Sensor*	**Sens Tst** *Sensor Test in Progress*	**PASS**
				FAIL
		Cyan *Cyan Color Wheel Sensor*	**Sens Tst** *Sensor Test in Progress*	**PASS**
				FAIL
		Yellow *Yellow Color Wheel Sensor*	**Sens Tst** *Sensor Test in Progress*	**PASS**
				FAIL
		Magenta *Magenta Color Wheel Sensor*	**Sens Tst** *Sensor Test in Progress*	**PASS**
				FAIL
		Fixed Color Wheel *Fixed Color Wheel Sensor*	**Sens Tst** *Sensor Test in Progress*	**PASS**
				FAIL
		Rot Gobo *Rotating Gobo Sensor*	**Sens Tst** *Sensor Test in Progress*	**PASS**
				FAIL
		Gobo Index *Gobo Index Sensor*	**Sens Tst** *Sensor Test in Progress*	**PASS**
				FAIL
		Fixed Gobo *Fixed Gobo Wheel Sensor*	**Sens Tst** *Sensor Test in Progress*	**PASS**
				FAIL
	Temps *Luminaire operational temperatures*	**XXXXX** *Data*	Press [Menu] to stop tests	
	Fans *Luminaire cooling fans*	**RunTest**		

*Refer to "Diagnostic Tests" on page 78 for more information.

Function Definitions

Each menu item is listed in the first column by its display abbreviation. The abbreviations appear in alphabetical order as opposed to their position in the menu display sequence for easy reference.

Table 4-2: Menu Function Definitions

Display	Definition	Purpose
10Min	10 Minutes	Sets Menu Display to automatically shut off after 10 minutes of non-use.
30sec	30 Seconds	Sets Menu Display to automatically shut off after 30 seconds of non-use.
5Min	5 Minutes	Sets Menu Display to automatically shut off after 5 minutes of non-use.
Address	Address	Accesses functions for setting luminaire starting address in DMX (**DMX**) controlled systems.
ALL SEQ	All Sequence	Performs all tests in sequential order.
Beam Iris	Beam Iris	Specifies beam iris function for manual control (**Manual**) or for testing (**Test**).
Cal ON	On after Calibration	Configures arc luminaire so that lamp will strike after calibration procedure is complete.
ChgLumID	Change the luminaire ID number	Allows access to change or set the luminaire ID number.
Config	System Configuration	Accesses functions for setting lamp start up, pan/tilt, Menu Display, changing luminaire ID, and resetting luminaire default values.
ColorMix	Crossfade Color Wheels	Specifies crossfade color wheels for testing (**Test**).
ColrWhl	Color Wheel	Specifies fixed color wheel for testing (**Test**).
Chan XX	DMX Channel	Specifies DMX channel for display of current data value.
Cyan	Cyan Color Wheel	Specifies Cyan color wheel for manual control (**Manual**) or for testing (**Test**).
Data	DMX Data	Accesses function for displaying DMX data by channel number.
Dimmer	Dimmer	Specifies dimmer mechanism for manual control (**Manual**) or for testing (**Test**).
Disable	Disable	Disables a function.
Display	Display Illumination	Accesses options for Menu Display on and off times.
DMX	DMX	Accesses functions for setting DMX Data or pan/tilt options.
Download	Download	Downloads program to luminaires.
Edge	Edge Motor	Specifies edge function for manual control (**Manual**) or for testing (**Test**).
Enable	Enable	Enables a function.
Encoder	Encoders	Accesses pan or tilt encoder for diagnostic testing (**Test**).
FAIL	Test Fail	Indicates that sensor test has failed.
FixColWhl	Fixed Color Wheel	Specifies fixed color wheel for manual control (**Manual**).
FixGobo	Fixed Gobo	Specifies fixed gobo wheel for manual control (**Manual**) or for testing (**Test**).
Fixt Hrs	Fixture Hours	Displays total number of hours luminaire has been powered on.
Fixture	Fixture	Access luminaire specification information such as software version, along with status information and download function.

Table 4-2: Menu Function Definitions (Continued)

Display	Definition	Purpose
Gobo	Gobo Select	Specifies rotating gobo select for manual control (**Man**) or gobo select EOT sensor for testing (**Test**).
GobIndx	Gobo Indexes	Specifies rotating gobo select sensor for testing (**Test**).
Index	Gobo Index	Specifies rotating gobo index for manual control (**Manual**).
InvPan	Invert Pan	Reverses pan action for special focus requirements.
InvTilt	Invert Tilt	Reverses tilt action for special focus requirements.
Lamp	Lamp Options	For accessing lamp options and configuration (**Config**) or for testing (Test) to disable pan/tilt for lamp adjustment.
Lamp OFF	Lamp Off	Configures arc luminaire to strike lamp on manual command.
Lamp ON	Lamp On	Configures arc luminaire to strike lamp at power up.
Lamp Hour	Lamp Hours	Displays total number of lamp operating hours.
LumId	Luminaire ID	Displays unique identification number for the luminaire.
Magenta	Magenta Color Wheel	Specifies Magenta color wheel for manual control (**Manual**) or for testing (**Test**).
Manual	Manual Commands	Accesses functions for controlling luminaire mechanisms and timing by entry of an absolute data value.
Model	Model	Displays type of luminaire (**Spot** or **Wash**).
Move-ment	Movement	Enables and disables pan and tilt movement and auto-correction.
NoProg	No Program	Indicates that there is no software present in the luminaire.
OFF	Off	Turns off a function.
OK	Okay	Indicates that luminaire is ready to accept commands.
OK?	Okay?	Prompt for pressing [Enter] before an action is executed.
ON	On Indefinitely	Sets Menu Display to stay on until programmed otherwise (**Display**), turns on a function, or turns on a menu item.
Pan/Tilt	Pan/Tilt	Accesses pan and tilt options for DMX function, system configuration, and testing.
Pan	Pan	Specifies pan function for manual control (**Manual**) or pan encoder for testing (**Test**).
PASS	Test Pass	Indicates that sensor test has passed.
Power	Lamp Power	Accesses function to turn lamp on or off.
Power Up	Lamp Power Up	Accesses options for lamp power up: on, off, or after calibration.
Re-cal	Recalibrate	Recalibrates luminaire.
Reset Def	Reset Default	Resets default system configuration values.
Reset Hrs	Reset Lamp Info	Resets lamp hour and lamp strike counters. For use when new lamp is installed.
RotGobo	Rotating Gobo	For setting (**Manual**) or testing (**Test**) rotating gobo wheel or sensor.
RunTest	Run Test	Indicates that a system test is in progress.
Sensor	Sensors	Accesses sensor choices for diagnostic testing.
Sens Tst	Sensor Test	Indicates that a system sensor test is in progress.
SetUp	Luminaire Set Up	For selecting which (**Model**) of luminaire - spot or wash.
Status	Status/Error Display	Provides the status of the fixture (**Fixture**) and any error messages.

Table 4-2: Menu Function Definitions (Continued)

Display	Definition	Purpose
Strobe	Strobe	Specifies strobe function for manual control (**Manual**) or for testing (**Test**).
Swap	Swap	Swaps pan and tilt functions for special focus requirements such as moving mirror mechanisms.
Test	System Tests	Accesses diagnostic tests for luminaire's mechanisms.
Tilt	Tilt	Specifies tilt function for manual control (**Manual**) or tilt encoder for testing (**Test**).
Version	Software Version	Displays current software version by date (**XX/XX/XX**).
Yellow	Yellow Color Wheel	Specifies Yellow color wheel for manual control (**Manual**) or for testing (**Test**).
Zoom	Zoom	Specifies zoom function for manual control (**Manual**) or for testing (**Test**).

Self Tests

Running Parameter Tests

The luminaire is capable of running self tests by using the TEST menu functions. For complete details and values for each test refer to "Diagnostic Tests" on page 78.

When running tests on multiple luminaires, a DMX termination connector is required at the last luminaire in the link. (Refer to page 17 for more information regarding the construction of this connector.).

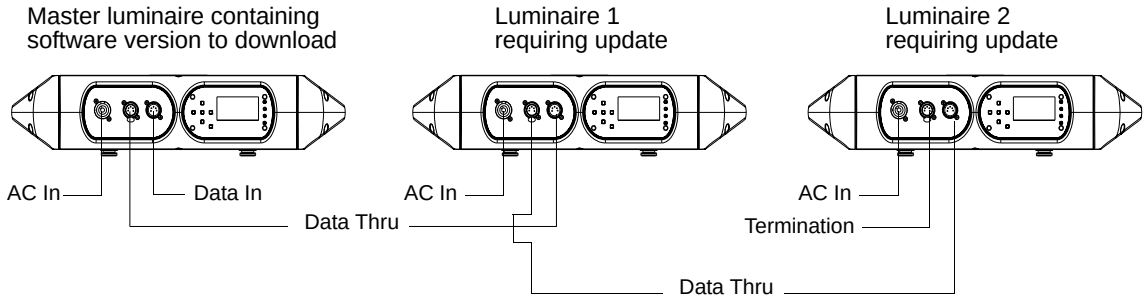


Figure 4-3: Test Setup

To run tests:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Test appears. Press [Enter].

Step 3. Use [Up] / [Down] arrows to select a parameter to test. Refer to "Menu System Functions" on page 68 for a complete list of test parameters which can be chosen.

Step 4. Press [Enter] to run test.

Step 5. Press [Menu] to stop test at any time.

Note: Connected luminaires may not respond on the first action (may delay) of the master luminaire.

Movement Disable

The Movement option allows pan and tilt to be disabled so that the luminaire can be placed in any position for testing without movement occurring. In order to regain full control of the luminaire, Movement will need to be enabled after testing.

Note: When using the Movement option, pan and tilt will be disabled for all the luminaires that are linked.

To set movement option:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Config appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows until Pan/Tilt appears. Press [Enter].

Step 4. Movement will be displayed. Press [Enter].

Step 5. Use [Up] / [Down] arrows to select Enable or Disable. Press [Enter] to select.

Diagnostic Tests

The following diagnostic tests are available in the test menu.

Test Descriptions

All Seq..... Tests all functions in sequential order.
Pan/Tilt..... Tests different pan and tilt movements.
Pan..... Tests different pan movements.
Tilt ..... Tests different tilt movements.
Dimmer..... Tests different dimmer operation.
Strobe..... Tests strobe operation.
Cyan..... Tests Cyan color wheel movements.
Yellow..... Tests Yellow color wheel movements.
Magenta ..... Tests Magenta color wheel movements.
Color Mix..... Tests operation of the color mixing system.
Color Wheel ..... Tests fixed color wheel operation.
Rotating Gobo ... Tests rotating gobo wheel operation.
Gobo Index..... Tests rotating gobos movement.
FixGobo..... Tests fixed gobo wheel movement.
Edge..... Tests edge movement.
Zoom..... Tests zoom movements.
Iris ..... Tests iris movement.
Frost ..... Tests frost operation / movement.
Prism..... Tests prism operation / movement.
Lamp ..... Allows user to manually put luminaire in position to align lamp.
Encoder..... Disables pan and tilt and displays encoder value.
Sensor..... Tests sensors for selected test (Tilt, Dimmer, Cyan, Yellow, Magenta, Fixed Color Wheel, Rotating Gobos, Gobo Index, Fixed Gobo Wheel, Edge, Zoom, Prism, or Frost).
Temperature..... Displays LVS or MCB temperatures (in °C).
Fan..... Tests fan operation.

APPENDIX A.

Maintenance

This appendix provides instructions for performing routine maintenance which may be necessary during the life of the luminaire.

- **Equipment Handling**
- **Troubleshooting**
- **Routine Maintenance**

WARNING: All maintenance procedures are to be performed with power completely removed from the luminaire. Never remove covers or backcap assembly while lamp is in operation.

Equipment Handling

Below are some basic tips and information on handling luminaires and their associated components.

Locations/Use

VARI✳LITE luminaires are designed for dry locations only. Exposure to rain or moisture (including, but not limited to, fog machines, misters, etc.,) may damage luminaire.

Lamps

Servicing

- When handling a lamp, hold it by the ceramic base while wearing cotton gloves or finger cots. Do not touch the glass envelope (bulb). If you touch the glass with bare fingers, immediately wipe off any fingerprints with isopropyl alcohol.
- Use care when opening and closing the rear castings (or covers) of luminaires and cleaning reflectors. Any jarring can undo the optical alignment of the lamp.

Heat

When lamps are lit, the interior of the luminaires becomes very hot. To aid in the airflow circulation within the luminaires, after dousing the lamps, wait ten minutes before removing power to the luminaires. This will provide enough time for the equipment fan to cool off the unit. Users should wait until the unit is cool to the touch before servicing or handling.

Lamp Life

- When operating arc lamps, allow luminaires to operate for at least 3 minutes. It takes about 3 minutes for the fill components (mercury and halogen-metal compounds) in the lamp tubes to vaporize completely. If the lamps are switched off earlier than 3 minutes, the fill components are partially vaporized. The inadequately vaporized fill components and the electrode material (tungsten) are deposited in the areas of the lamp tubes that have remained cool. As a result, the lamp tubes blacken prematurely and reduce the service life of the lamps.
- If system will be unattended for more than two hours, luminaire lamps should be doused. Standby mode should not be used for more than two hours.
- When the lamp is struck, the luminaire should be maintained in a horizontal position when not in use.
- For arc lamp luminaires, heads should be tilted horizontal before starting lamps. Lamps generate light by an electrical discharge arc, whereby the electrons from two electrodes excite the fill components to give off light. Because of the alternating current "position", the electrons are alternately given off by the two electrodes. When a lamp is set in a vertical position, the halogen-metal compounds, which determine the color temperature of the lamp, collect at the top end of the glass envelope. When the lamp is started, color deviations occur since the concentration of halogen

compounds is greater around the top electrode than the bottom electrode. In addition, the fill components that are difficult to vaporize congeal around the bottom electrode, thereby reducing lamp life.

Solid State Electronics

Electrostatic Discharge (ESD)

Electrostatic discharge (ESD) presents a significant danger to solid state electronic components (semiconductor devices and PC board assemblies). Static electricity can build on a variety of common objects (including people) simply by handling or moving. ESD rarely results in immediate failure of a component, but shows up later as an intermittent problem or severely reduces the life of the component. All VARI✳LITE equipment uses solid state electronics and appropriate precautions to protect them should be observed when servicing.

Printed Circuit Boards (PCBs)

All PC boards should be shipped in electrostatic shielding bags. When handling PC boards or components, devices such as conductive mats and conductive wrist straps should be used whenever possible. If these precautionary devices are not available, handling of PC boards and components should be avoided.

CAUTION: Black foam (used to package solid state electronics) should never be used for packing batteries or put in contact with PC boards which contain batteries.

Troubleshooting

Error Messages

If a problem occurs during luminaire calibration, at the end of the calibration sequence the Menu Display will cycle through any applicable error message(s), one at a time until the end of the list is reached. To review the error messages again, it will be necessary to access them using the Status function.

Refer to next page for a list of possible causes and remedies associated with the error messages.

To access error messages:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Fixture appears. Press [Enter].

Step 3. Press [Up]/ [Down] arrows to access Status. Press [Enter]. (Display will now scroll through any error messages or display OK if no errors.)

Display	Message
OK	No Errors Found
Pan/Encoder/Fail	Pan encoder failure.
Tilt/No Sens	Tilt sensor not found.
Tilt/Encoder/Fail	Tilt encoder failure.
Index/No Sens	Gobo Index sensor not found.
RotGobo/No Sens	Rotating Gobo wheel sensor not found.
FixGobo/No Sens	Fixed Gobo wheel sensor not found.
Dimmer/No Sens	Dimmer sensor not found.
Cyan/No Sens	Cyan sensor not found.
Yellow/No Sens	Yellow sensor not found.
Magenta/No Sens	Magenta sensor not found.
ColWheel/No Sens	Color wheel sensor not found.
Zoom/No Sens	Zoom sensor not found.
Edge/No Sens	Edge sensor not found.

Table A-1: Error Messages

Troubleshooting Guide

If a problem is suspected, first try recalibrating the luminaire to prompt an error message. The chart below provides possible causes and remedies for various error messages and/or symptoms.

CAUTION: Some troubleshooting is included for reference only. Performing remedies may void product warranty. Refer to the Vari-Lite Limited Warranty card included with the product.

Table A-2: Troubleshooting Guide

Message	Symptom	Description	Possible Cause/Remedy
Lamp Power Douse	Lamp does not strike upon start-up	Lamp Off option is configured	- Reconfigure lamp startup option in Lamp config menu.
n/a	Lamp douses frequently	Lamp Douse	Fan failure... - check head and enclosure fans for proper operation. Ballast overheating... - operating within the specified ambient temperature? - check enclosure vents for debris / dirt. - check fan settings in menu. - check enclosure fans for proper operation. NOTE: Upon initial power up, ballast fans will run for a few seconds and then operate as needed. Enclosure vents must be clear of debris and dirt to allow proper airflow.
n/a	Lamp will not strike	Lamp Strike Failure	Lamp cutout switch disengaged... - check lamp cutout switches at lamp box and fan ducts. Bad lamp... - replace lamp. Low input voltage... - check input power (must be 100 to 240 VAC).
n/a	Luminaire behaves oddly	Profile Not Matched	Profile not set correctly... - check Setup menu for correct type (console patch / profile).
n/a	Luminaire does not power up	No power	Circuit not energized... - verify circuit breaker (at source) is turned on. Not plugged in... - ensure A/C cable is connected to power source.
n/a	Self tests will not run or software download does not work from luminaire.	DMX Data Input	Detecting DMX data... - disconnect DMX input cable.
n/a	No response to DMX data	DMX Failure	DMX connector disconnected... - check DMX DATA IN connection.
n/a	Erratic control of luminaire	DMX Termination	No DMX termination or termination not correct... - check for DMX terminator.

Routine Maintenance

Lamp Removal and Installation

WARNING: Ensure that power is completely removed from luminaire when removing or installing lamp.

CAUTION: Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use isopropyl alcohol and cotton cloth to thoroughly clean glass portion of lamp.

To remove and install lamp:

Step 1. Ensure power is completely removed from luminaire and luminaire has cooled completely.

Step 2. Set the luminaire head horizontally.

Step 3. Engage service tilt lock to secure luminaire head in position.

Step 4. At back of luminaire, using #2 Phillips screwdriver, remove lamp socket cover by loosening the two quarter-turn fasteners. Note: lamp socket cover is connected with a safety tether.

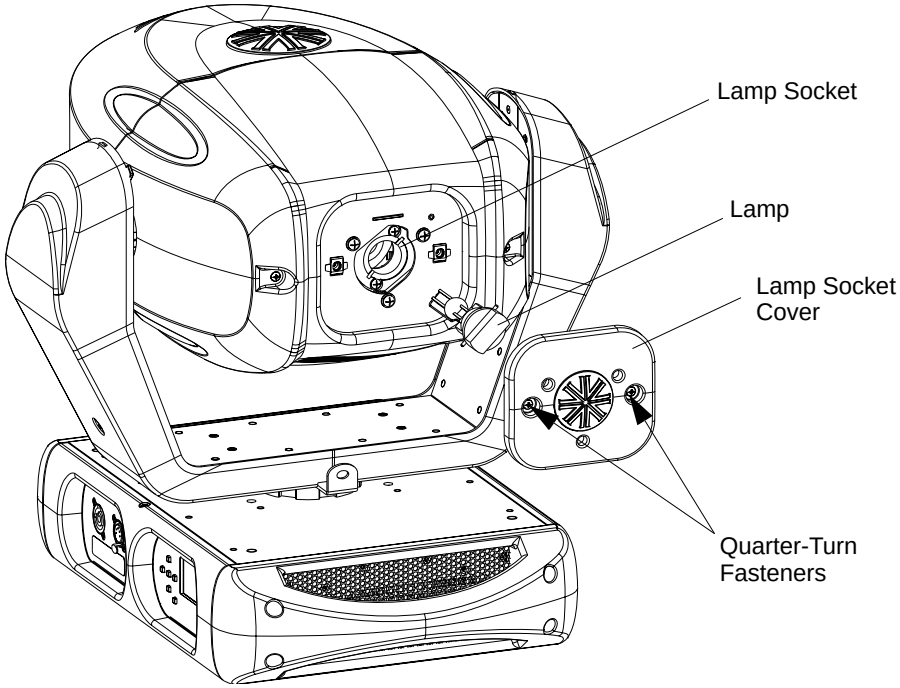


Figure A-1: Lamp Socket Cover Removal

Step 5. Remove old lamp from socket by rotating lamp base counter-clockwise until lamp tabs align with lamp socket slots.

Step 6. As shown in Figure A-2, align lamp tabs with lamp socket.

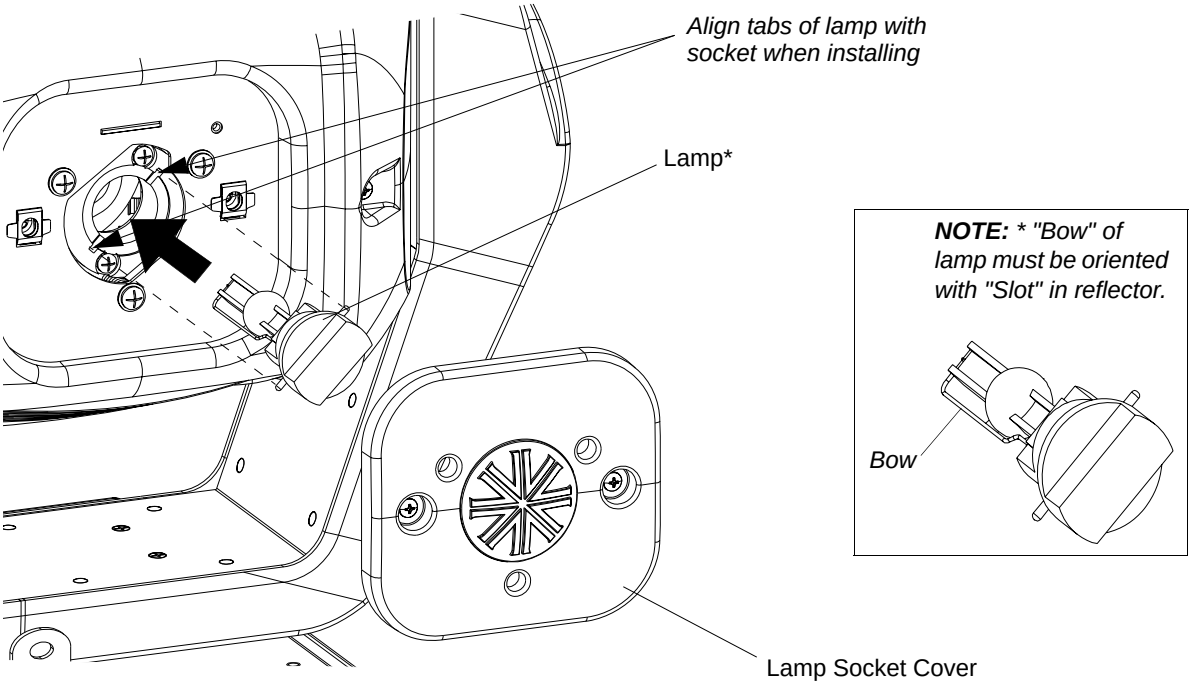

Align tabs of lamp with socket when installing
Lamp*
NOTE: * "Bow" of lamp must be oriented with "Slot" in reflector.
Bow
Lamp Socket Cover

Figure A-2: Lamp Installation

Step 7. Install lamp fully into lamp socket, taking care not to touch lamp glass.

Step 8. Turn lamp clockwise to seat lamp into socket. Lamp base should be aligned as illustrated in Figure A-3.

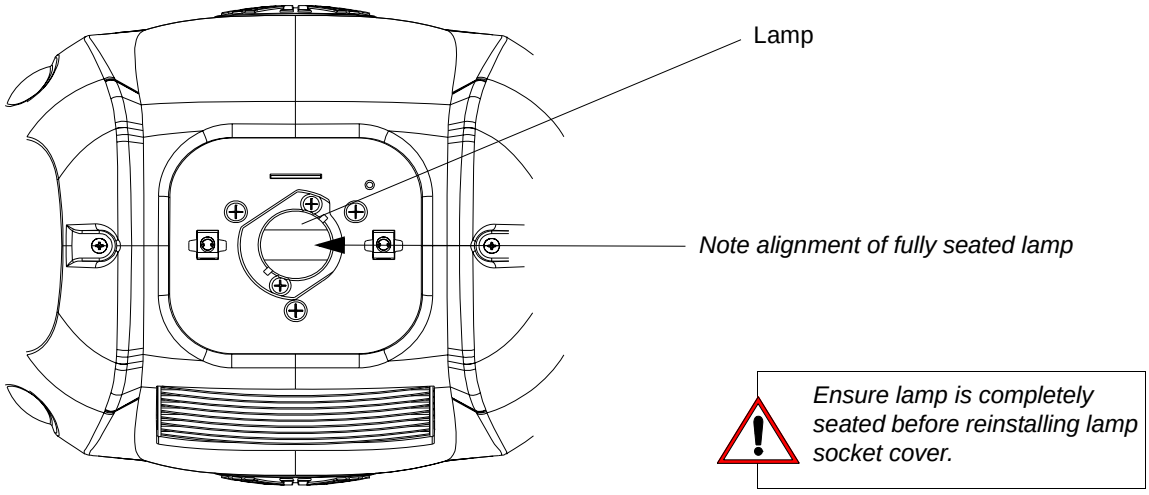


Figure A-3: Installed Lamp

Step 9. Reinstall lamp socket cover. Make sure safety tether is completely encapsulated within lamp socket cover.

Step 10. Disengage service tilt lock to allow luminaire head to move freely.

Step 11. Align lamp as described in "Align Lamp For Maximum Beam Irradiance" on page 20.

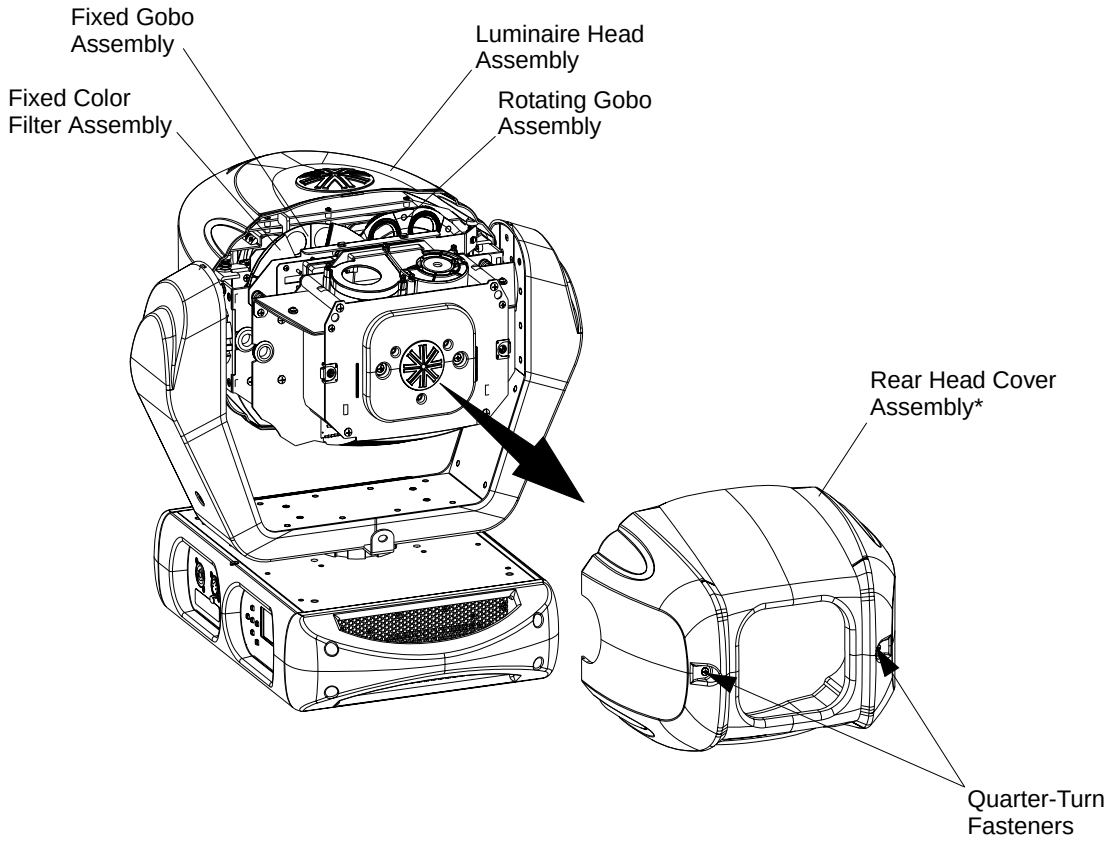
Fixed Color Wheel Filter Removal and Installation

WARNING: Remove power from luminaire before performing this procedure.

To remove and replace fixed color filters:

Step 1. Remove power from luminaire and allow luminaire to cool completely.

Step 2. As illustrated in Figure A-4, at rear cover assembly, remove rear head cover by loosening two captive quarter-turn fasteners and sliding cover away from luminaire head. Note, rear head cover is attached by a safety tether.



** Rear head cover assembly secured with a tether.*

Figure A-4: Replacing Fixed Color Filters

CAUTION: Wear protective gloves or other protective covering while handling filters to avoid leaving fingerprints. Filters are extremely fragile and can break if not handled carefully. If dirty, clean with isopropyl alcohol and a soft, lint-free cloth.

Step 3. At fixed color wheel, slowly rotate wheel by hand until filter to be removed is at top of assembly as shown in Figure A-4.

Step 4. Grasp filter with fingers and gently pull filter assembly straight up and out of fixed color wheel. Note orientation of fixed color filter. New color filter must go in exactly the same.

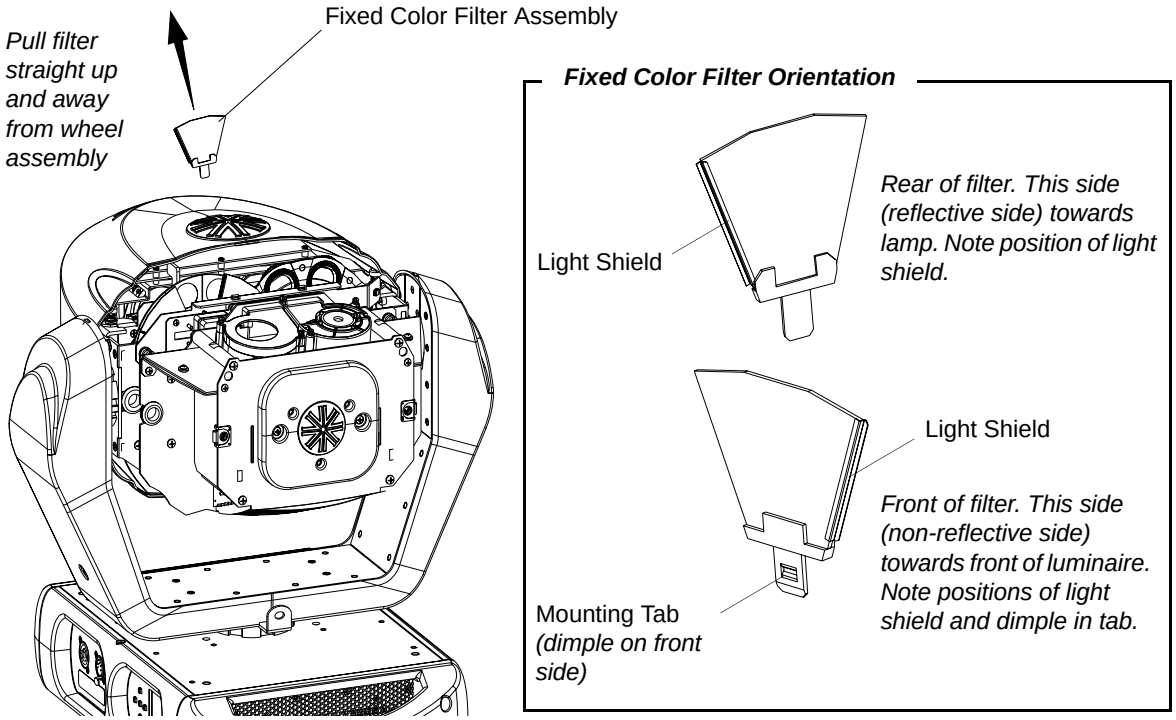

Fixed Color Filter Assembly
Pull filter straight up and away from wheel assembly
Fixed Color Filter Orientation
Light Shield
Rear of filter. This side (reflective side) towards lamp. Note position of light shield.
Light Shield
Front of filter. This side (non-reflective side) towards front of luminaire. Note positions of light shield and dimple in tab.
Mounting Tab (dimple on front side)

Figure A-5: Removing / Installing Fixed Color Filters

Step 5. At position where fixed color filter was removed, place replacement fixed color filter over open slot (as shown in Figure A-6), slide into wheel, and gently snap filter into place.

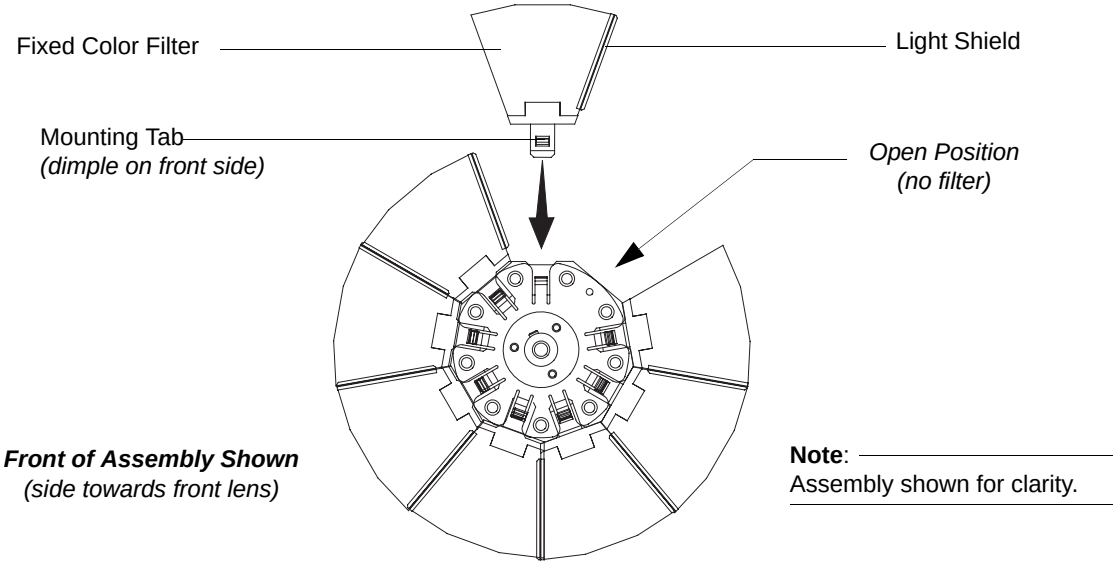

Fixed Color Filter
Light Shield
Mounting Tab (dimple on front side)
Open Position (no filter)
Front of Assembly Shown (side towards front lens)
Note: Assembly shown for clarity.

Figure A-6: Fixed Color Filter Wheel - Filter Installation.

Step 6. After filter is installed, reinstall rear head cover.

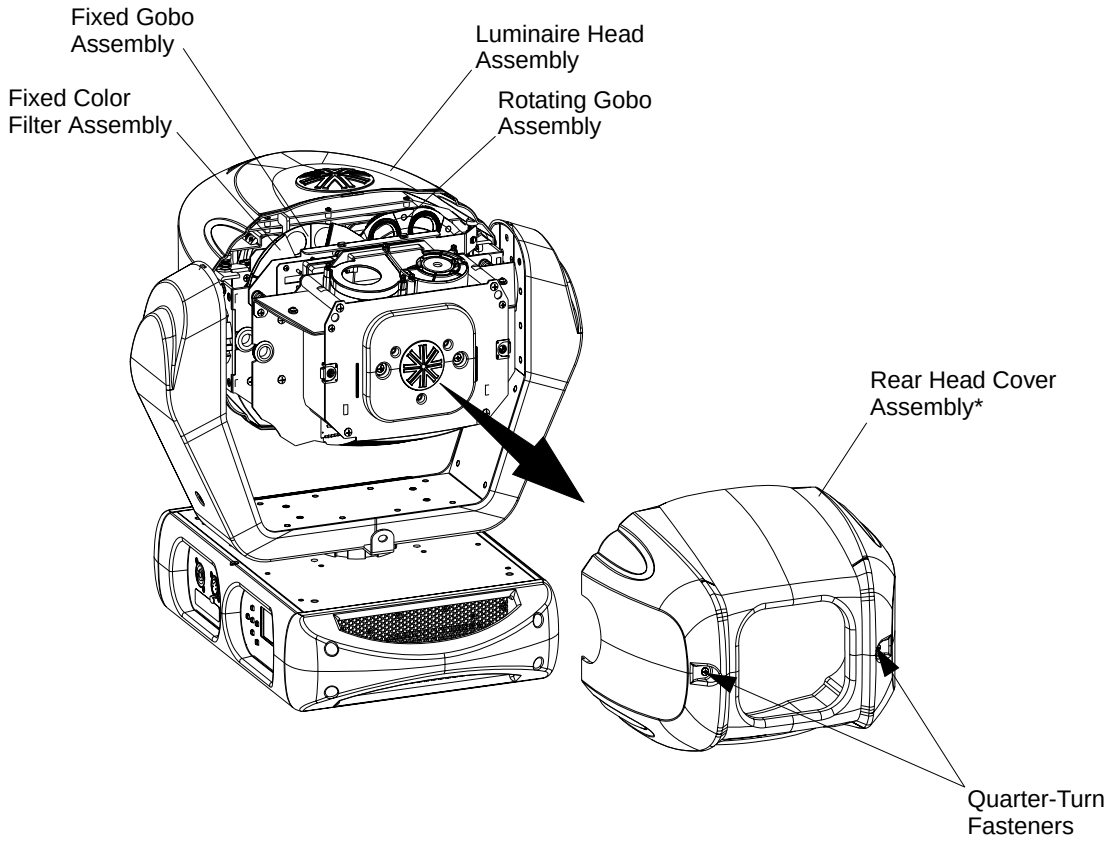
Rotating Gobo Removal and Installation

WARNING: Remove power from luminaire before performing this procedure.

To remove and replace rotating gobos:

Step 1. Remove power from luminaire and allow luminaire to cool completely.

Step 2. As illustrated in Figure A-7, at rear cover assembly, remove rear head cover by loosening two captive quarter-turn fasteners and sliding cover away from luminaire head. Note, rear head cover is attached by a safety tether.



** Rear head cover assembly secured with a tether.*

Figure A-7: Replacing Rotating Gobos

CAUTION: Wear protective gloves or other protective covering while handling gobos and filters to avoid leaving fingerprints. Gobos are extremely fragile and can break if not handled carefully. If dirty, clean with isopropyl alcohol and a soft, lint-free cloth.

Step 3. At rotating gobo wheel, slowly rotate wheel by hand until gobo to be removed is at top of assembly as shown in Figure A-8.

Step 4. Grasp gobo carrier with fingers and gently pull gobo assembly straight up and out of rotating gobo wheel. Note orientation of rotating gobo carrier assembly. New gobo assembly must go in exactly the same.

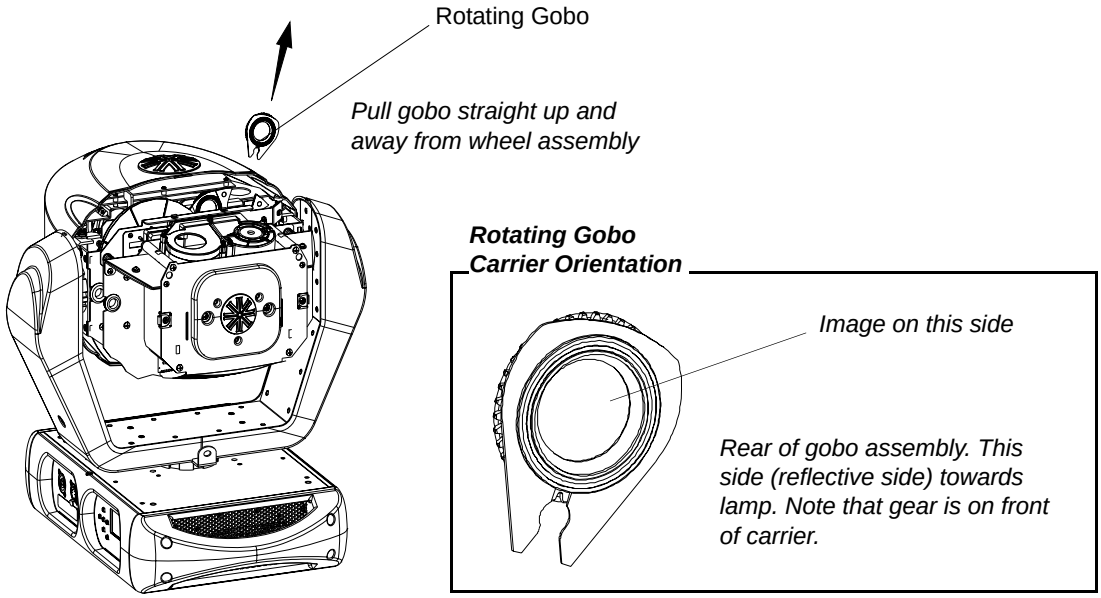

Rotating Gobo
Pull gobo straight up and away from wheel assembly
Rotating Gobo Carrier Orientation
Image on this side
Rear of gobo assembly. This side (reflective side) towards lamp. Note that gear is on front of carrier.

Figure A-8: Removing / Installing Rotating Gobos

Step 5. At position where rotating gobo was removed, place replacement rotating gobo over open slot (as shown in Figure A-9), slide into wheel, and gently snap gobo into place.

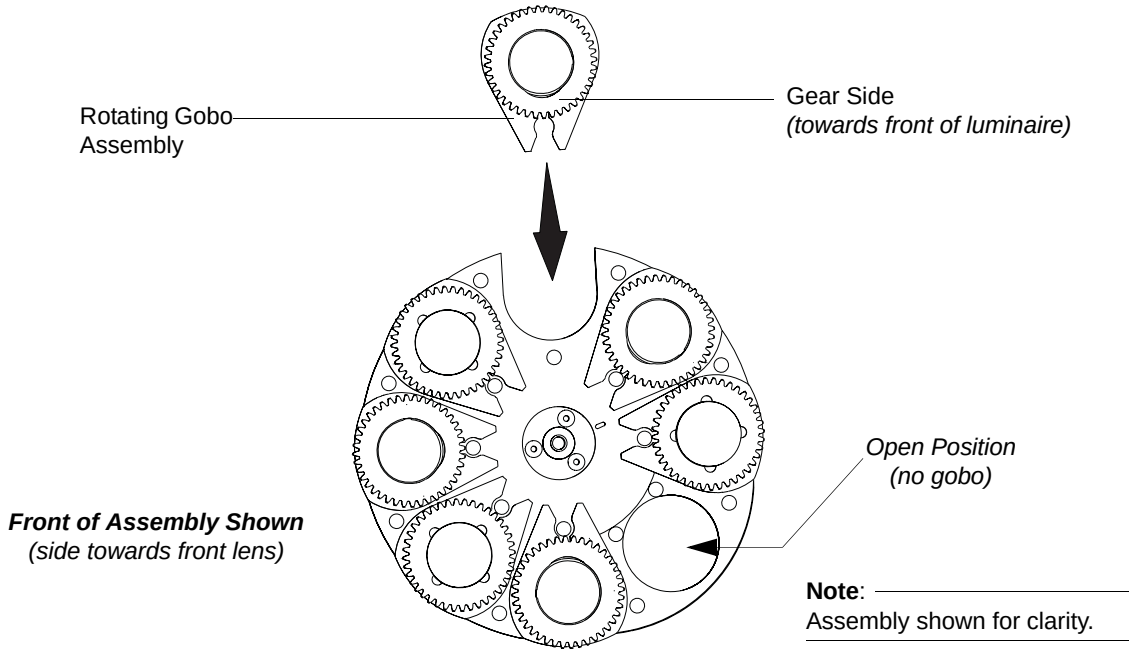


Figure A-9: Rotating Gobo Wheel - Gobo Installation.

Step 6. After rotating gobo is installed, reinstall rear head cover.

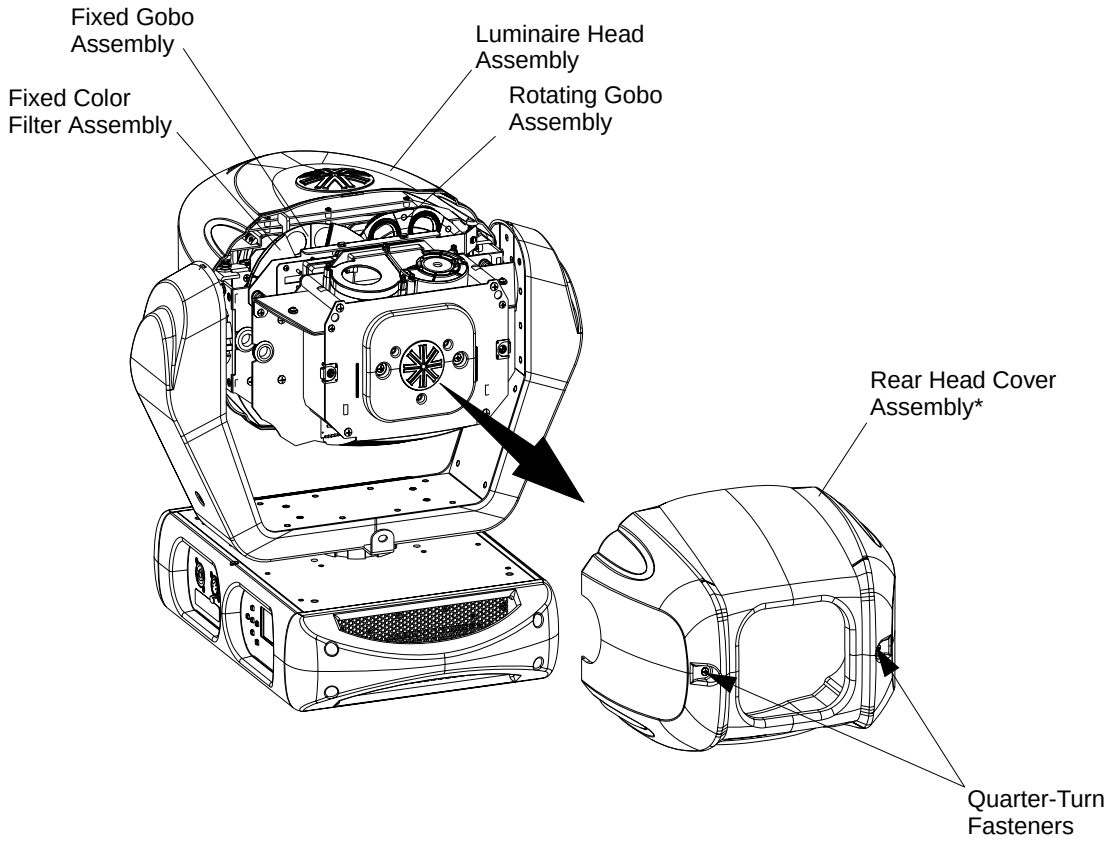
Fixed Gobo Removal and Installation

WARNING: Remove power from luminaire before performing this procedure.

To remove and replace fixed gobos:

Step 1. Remove power from luminaire and allow luminaire to cool completely.

Step 2. As illustrated in Figure A-10, at rear cover assembly, remove rear head cover by loosening two captive quarter-turn fasteners and sliding cover away from luminaire head. Note, rear head cover is attached by a safety tether.



** Rear head cover assembly secured with a tether.*

Figure A-10: Replacing Fixed Gobos

CAUTION: Wear protective gloves or other protective covering while handling gobos to avoid leaving fingerprints. Gobos are extremely fragile and can break if not handled carefully. If dirty, clean with isopropyl alcohol and a soft, lint-free cloth.

Step 3. At fixed gobo wheel, slowly rotate wheel by hand until gobo to be removed is at top of assembly as shown in Figure A-11.

Step 4. Grasp gobo carrier with fingers and gently pull gobo assembly straight up and out of fixed gobo wheel. Note orientation of fixed gobo. New gobo must go in exactly the same.

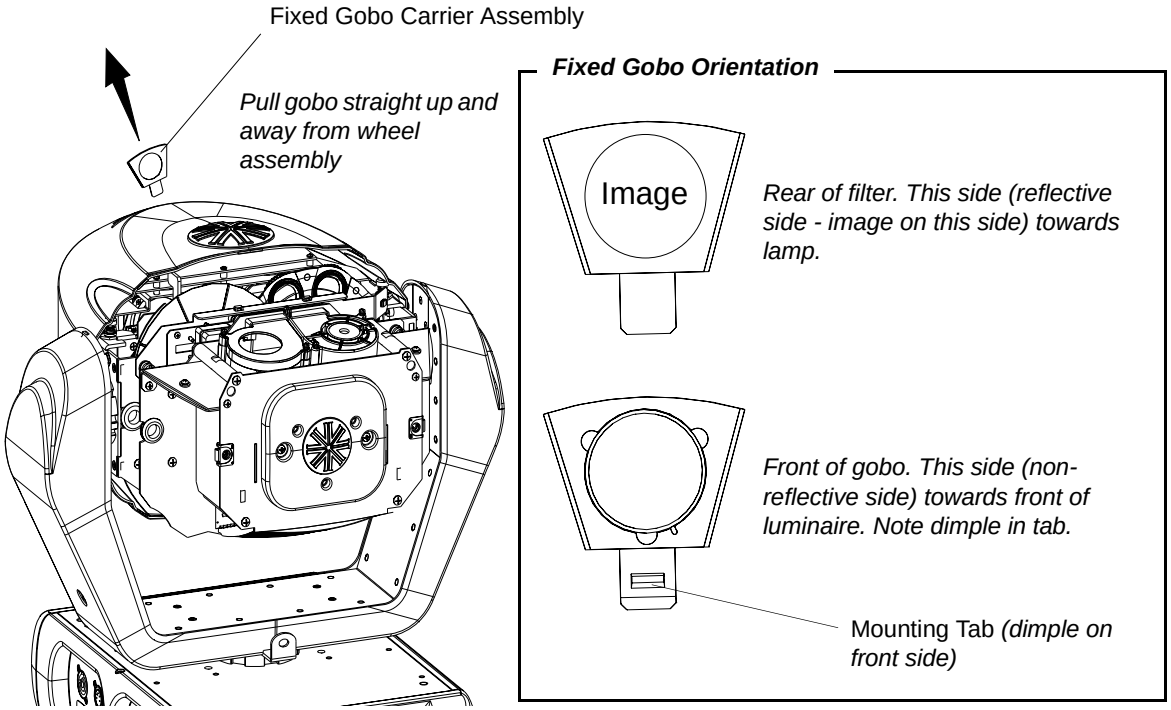

Fixed Gobo Carrier Assembly
Pull gobo straight up and away from wheel assembly
Fixed Gobo Orientation
Image
Rear of filter. This side (reflective side - image on this side) towards lamp.
Front of gobo. This side (non-reflective side) towards front of luminaire. Note dimple in tab.
Mounting Tab (dimple on front side)

Figure A-11: Removing / Installing Fixed Gobos

Step 5. At position where fixed gobo was removed, place replacement fixed gobo over open slot (as shown in Figure A-12), slide into wheel, and gently snap gobo into place.

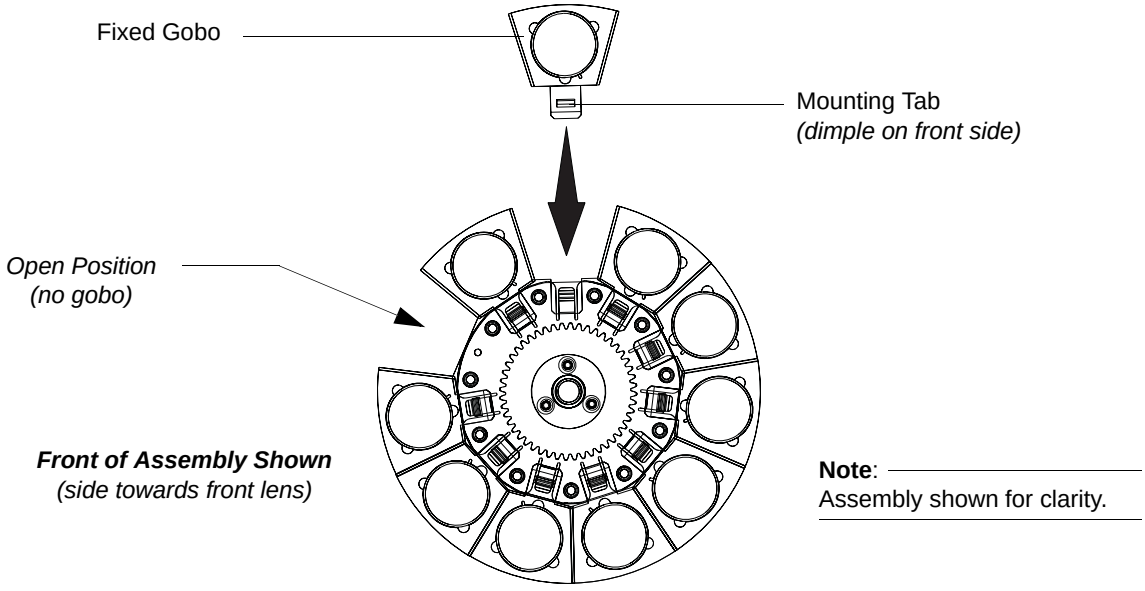


Figure A-12: Fixed Gobo Wheel - Gobo Installation.

Step 6. After gobo is installed, reinstall rear head cover.

Cleaning Optical Lenses and Filters

WARNING: Remove power from luminaire before performing maintenance.

WARNING: Acetone is a harsh cleaning agent and solvent. Acetone is very flammable. Please handle acetone according to manufacturer's safety instructions and precautions.

The front lens, optics/color filters, and reflector may require cleaning after extended use.

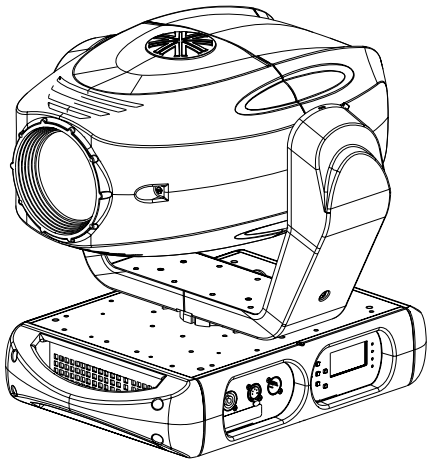
- FRONT LENS: Use a isopropyl alcohol with a soft, lint-free cloth to clean the front lens.
- OPTICS/COLOR FILTERS/ GOBOS: Use Acetone or Isopropyl Alcohol along with a soft, lint-free cloth to clean the optics/color filters.
- REFLECTOR: Use Acetone or Isopropyl Alcohol along with a soft, lint-free cloth to clean the reflector.

CAUTION: Do not continuously rub color filters or reflector - it may damage or remove the optical coating.

APPENDIX B.

Technical Specifications

Mechanical



Color Mixing System

All models feature a three filter CYM cross-fading mechanism plus a fixed color wheel with 8 interchangeable color filters and 1 open space. Fixed wheel is capable of continuous rotation for additional effects.

Gobo Wheels

- All models feature one rotating gobo wheel with seven rotatable, indexable gobo positions and one open position. One fixed gobo wheel with 10 easily loaded patterns and one open position capable of continuous rotation for additional effects. 17 total gobos positions.
- VL440 Spot accepts both metal and glass gobos.
- VL770 & VL880 Spot accept glass gobos ONLY!.

Frost and Prism Capability

Independent, drop-in armature with frost glass. Second, independent, drop-in armature with rotating and indexable four facet prism. Both the frost and prism pieces are interchangeable.

Pan/Tilt

Smooth, time-controlled continuous motion by way of a high-power, three-phase stepper motor system.

- Range: Pan - 540° , Tilt - 260°.
- Pan/Tilt Accuracy: 0.3° resolution.

Weights:

- VL440 Spot: 56 lbs. (25.5 kg)
- VL770 Spot: 56 lbs. (25.5 kg)
- VL880 Spot: 56 lbs. (25.5 kg)

Spacing:

All models hang on 23 inch (58.5 cm) centers. Refer to illustration on page 21.

Optical

Source

Model	Lamp	Color Temperature	Output
VL440 Spot	400W MSR Gold 400 MiniFastFit Lamp	6000K	9,000 Lumens
VL770 Spot	700W MSR Gold 700 MiniFastFit Lamp	6000K	15,000 Lumens
VL880 Spot	800W MSR Platinum 35 Lamp	6000K	19,000 Lumens

Reflector

Precision facetted, elliptical glass reflector system with dichroic cold mirror coating.

Zoom Optics / Control

- All models feature a high-speed, precision zoom optical system with continuously variable field angle from approximately 15° to 36°; programmable over a timed range of 1.5 seconds to 20 minutes.
- Variable beam focus to soften edges of gobos or spots.

Intensity Control

All models contain a coated glass dimmer wheel provides full-field dimming designed for smooth timed fades. These models also feature a high-performance dual blade strobe system capable of ultra-fast operation.

Operational

Power Requirements

- VL440 Spot: Standard AC power distribution from 100 - 240VAC, 50/60 Hz. The unit requires up to 6.6A (at 100V) depending on the AC supply voltage.*
- VL770 Spot: Standard AC power distribution from 100 - 240VAC, 50/60 Hz. The unit requires up to 10.2A (at 100V) depending on the AC supply voltage.*
- VL880 Spot: Standard AC power distribution from 100 - 240VAC, 50/60 Hz. The unit requires up to 12.0A (at 100V) depending on the AC supply voltage.*

Note: *For a breakdown of total luminaire current draw at different voltages for all models covered in this manual, see "Current vs. Voltage" on page 14.

Operational Temperature

-20° to 122°F (-29° to 50°C)

Cooling

Forced-air cooling.

Control

Control by DMX512 protocol. Compatible with a wide variety of DMX512 consoles.

DMX Channels

30 channels.

Mounting Position

The luminaire can be mounted and operated in any orientation.

NOTE: Vari-Lite reserves the right to change details of design, materials and finishes. Specifications are subject to change without notice. VARI✻LITE automated lighting equipment is made in the U.S.A.

Photometric

VL440 Spot Luminaire

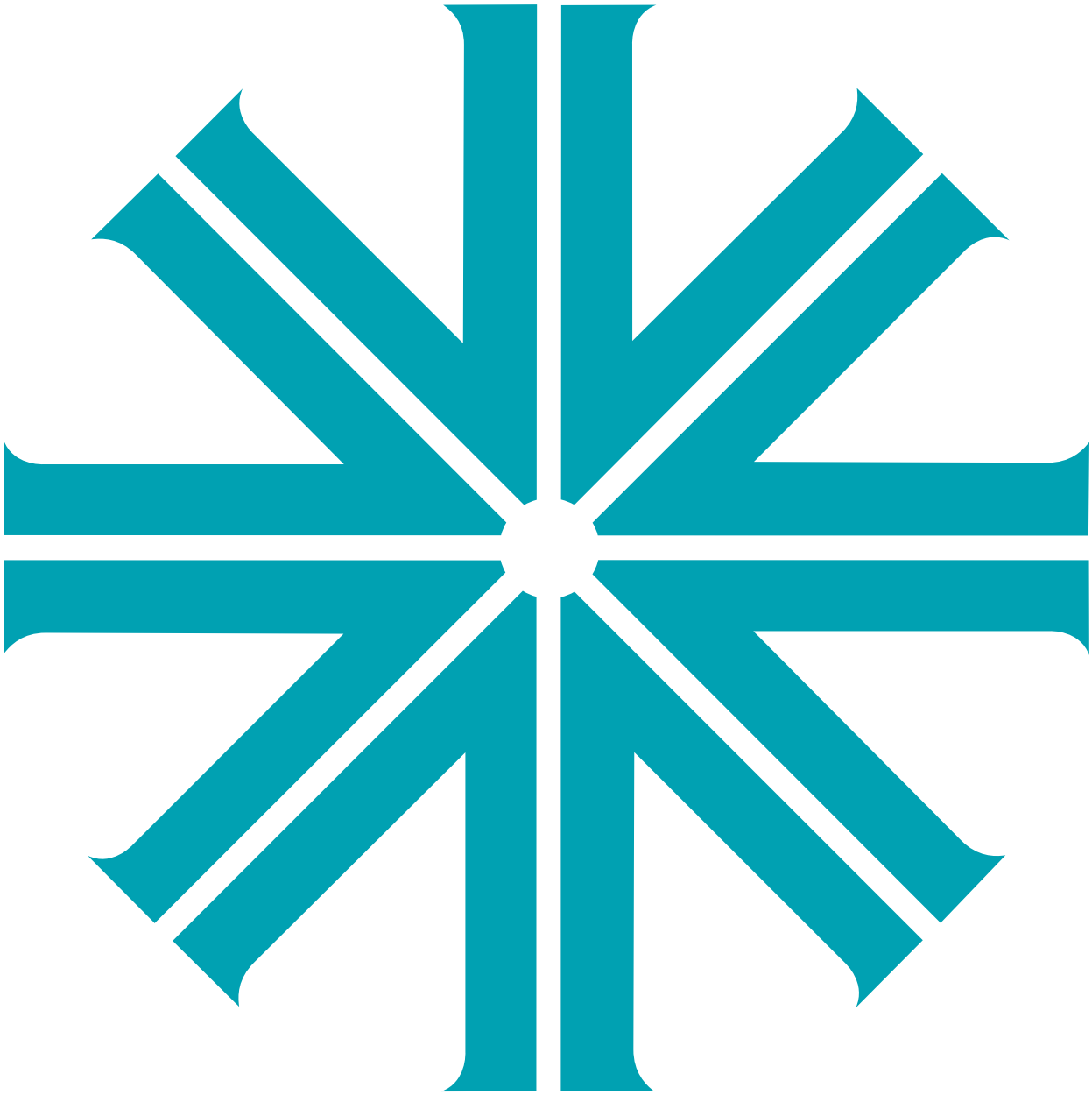
VL440 Spot Luminaire - 400W MSR Gold 400 MiniFastFit Lamp (6000K Color Temperature)		
FIELD ANGLE (degrees)	**LUMENS**	**CENTER BEAM CANDELA** (cd)
15.0	8,500	275,300
26.0	8,750	93,800
36.0	9,000	51,200

VL770 Spot Luminaire

VL770 Spot Luminaire - 700W MSR Gold 700 MiniFastFit Lamp (6000K Color Temperature)		
FIELD ANGLE (degrees)	**LUMENS**	**CENTER BEAM CANDELA** (cd)
15.0	14,100	468,300
26.0	14,600	168,400
36.0	15,100	90,100

VL880 Spot Luminaire

VL880 Spot Luminaire - 800W MSR Platinum 35 Lamp (6000K Color Temperature)		
FIELD ANGLE (degrees)	**LUMENS**	**CENTER BEAM CANDELA** (cd)
15.0	18,200	537,900
26.0	18,750	183,200
36.0	19,000	103,600



VARI*LITE

Express yourself.

Vari-Lite
10911 Petal Street
Dallas, Texas 75238 USA
1-877-VARI-LITE ✻ 1-214-647-7880
www.vari-lite.com.

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